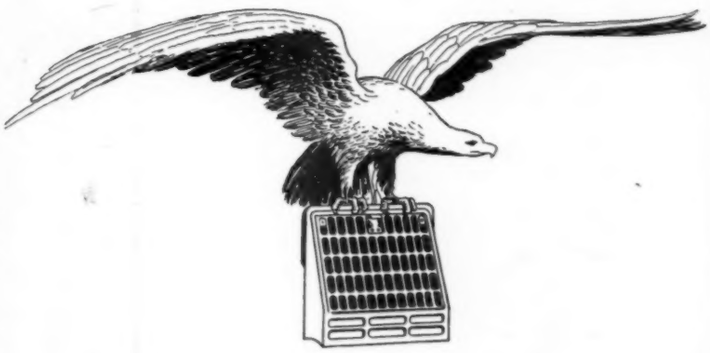
JUN 1 1921

AMERICAN ARTISAN and Hardware Record

Vol. 81. No. 22. 620 SOUTH MICHIGAN AVENUE, CHICAGO, MAY 28, 1921. $2.00 Per Year.

H&C



H&C

The Greatest Evidence

of H & C Register superiority that we can offer is the fact that each year the trade favors us with a tremendous growth of business. For over twenty years we have manufactured H & C Unbreakable Steel Registers and they are rated by the trade as being far above the standard in register construction. They have many special patented features, not found in other makes, and the line is large and complete including every style, size and form of register, grill, face or ventilator that you or your customers may desire. Compare them now with others for Strength—Air Capacity—Durability of Finish and Simplicity of Construction, and you'll use them on your next job.

We have an illustrated catalogue which contains heating and ventilating information which is valuable for you to have on hand. Write for your copy now, it illustrates and describes the entire line of H & C Registers.

The Hart & Cooley Company, Inc.

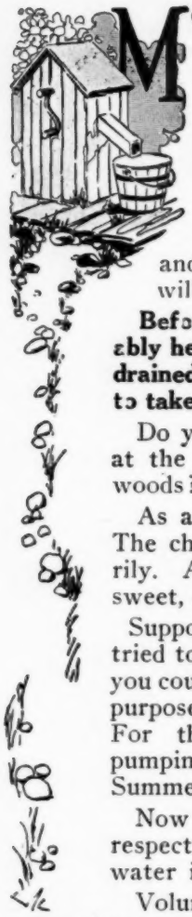
New Britain, Conn.

100 La Fayette St., New York, N. Y. **73 East Lake St., Chicago, Ill.**

Published Weekly, Entered as Second-Class Matter June 25, 1885 at the Post Office at Chicago, Illinois, under Act of March 3rd, 1879

ALPHABETICAL INDEX AND CLASSIFIED LIST OF ADVERTISERS, Pages 45 to 47

Just Explain to Him About Getting Rid of the COLD Air



MOST customers regard the faithful furnace as nothing more nor less than a producer of warm air. And they suppose that it injects, or forces, this warmth into every room in their home.

Yet modern heating experts tell quite a different story; and, upon a moment's thought, you will see they are correct. It is this:

Before any room can be comfortably heated, the cold air in it must be drained away, permitting warm air to take its place.

Do you remember the chain pump at the old well in the edge of the woods?

As a boy, you turned the handle. The chain and buckets clicked merrily. And soon the water, cold and sweet, came gushing out.

Suppose, for a moment, that you had tried to get **warm air into** the well—you could not have accomplished your purpose so easily in any other way. For the instant you commenced pumping water out, the warm, moist Summer atmosphere began to filter in.

Now cold air in a room is, in many respects, somewhat like the cold water in the well

Volume for volume, it **weighs more** than warm air, consequently **always sinks to the floor.**

Furthermore, it is **an excellent insulator and non-conductor of heat.** If allowed to remain on the floor, cold air keeps the floor cold; and it **stays cold itself,** regardless of how hard you may try to force warm air into the room with it.

The tremendous heating power of every RENOWN PIPELESS SYSTEM is due to the fact that it possesses **an insatiable appetite for cold air.** The cold air blanket on the floor of every room is therefore soon removed, and carried **bodily** to the furnace for heating.

Immediately throughout the entire house, warm, moist air **irresistibly** takes its place.

It's as simple as drinking from a goblet.

When the fire is built in a RENOWN FURNACE a constant demand for cold air is created, which is not satisfied until **all** cold air has been drawn from **every** room in the house not entirely shut off.

With the cold air "on the move" in your customer's home, the house heats itself—in every corner—as easily and naturally as in June.

Your prospect will appreciate the above explanation of the principles of the RENOWN Pipeless Furnace. For our liberal dealer's proposition address 1001 Bradley Street.

RENOWN

SMOKE-CONSUMING FURNACE

A Few Worth While RENOWN FEATURES Every Customer Appreciates

A Hot Blast Construction which really saves one-quarter to one-third the fuel bill.

An Automatic Heat Regulator which is actually fool-proof.

A Radiator which **cleans itself.**

An **unusually large combustion chamber** with tremendous heating **power.**

A large water-tight Ash Pit which permits sprinkling. Keeps the house **free from dust and ashes.**

The RENOWN comes both Pipe and Pipeless in a size for every need.

HEATING & COOKING **STOVES** **RENOWN** PIPE & PIPELESS **FURNACES**

INDEPENDENT STOVE CO. OWOSSO, MICH., U.S.A.

FOUNDED 1880
BY
DANIEL STERN
Thoroughly Covers
The Hardware, Stove, Sheet Metal, and Warm Air Heating and Ventilating Interests

AMERICAN ARTISAN and Hardware Record

Address all communications and remittances to
AMERICAN ARTISAN
AND
HARDWARE RECORD
620 South Michigan Avenue
Chicago, Illinois

PUBLISHED EVERY SATURDAY BY ESTATE OF DANIEL STERN

TERMS OF SUBSCRIPTION IN THE UNITED STATES AND ITS POSSESSIONS (Invariably in Advance) ONE YEAR POSTAGE PAID $2.00
FOREIGN COUNTRIES ONE YEAR POSTAGE PAID $4.00 CANADA ONE YEAR POSTAGE PAID $3.00

Entered as Second-Class Matter June 25 1885 at the Post Office at Chicago, Illinois under Act of March 3rd 1879

Vol. 81. No. 22. CHICAGO, MAY 28, 1921. $2.00 Per Year.

CHANGE YOUR ADVERTISING COPY!

If you let the same goods stay in your store window week after week, the people who are in the habit of passing your place will cease to pay attention to them. Only a percentage of the comparatively few strangers who chance along your street will be attracted by them.

It is precisely the same thing with your advertising in the local newspapers. If you do not change your copy frequently, it loses its power to arrest the notice of prospective customers.

It is a peculiarity of human nature that we can grow so thoroughly accustomed to anything as to become practically unconscious of it.

Persons living near railroad yards where switch engines are rattling back and forward all night and whistles screeching, soon become so used to the noise and disturbance that they sleep as soundly as if they were lying abed in the deep silence of a virgin forest.

Your advertising copy of this week may be as compelling in its demand upon the attention of readers as the shrillest whistle of the steam engine. But the people soon get accustomed to it and its effects sink below the threshold of consciousness.

That's the reason why you ought to change your advertising copy very frequently so that you are always telling a message in a new and fresh way that is bound to attract attention.

Say what you want to say, but do not make a sermon out of it.

You might as well stuff your money in a rat hole as to spend it on advertising which is not read by the people.

People won't read copy which is crowded with big words and exaggerated statements.

Another thing for you to remember is that, even in this country of public schools and general enlightenment, there are many who are very poor scholars.

But everyone can read and understand pictures. Hence illustrations that are plain and to the point and which show one or more of the selling features of your goods, should be used freely and persistently.

Change your advertising copy! Get out of the rut of dull business routine.

Your sales will increase by leaps and bounds when your advertising copy begins to carry a new message every time it appears.

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People Judge You By Your Establishment

You may be a linguist, a clever artist, a kind and indulgent father, an extremely popular man in your lodge or a genius of a certain kind. But most of your customers will not take any of these praiseworthy qualities and talents into account in dealing with you. They will judge you by your establishment. They estimate your character by the things you sell to them. They get their idea of your honesty, sincerity, and truthfulness by the kind of goods you carry in stock and the service you render in connection therewith.

If you handle unknown or unfavorably known products, no amount of social popularity and no degree of personal attainment in the arts and sciences will avail to bolster up your reputation as a business man in your neighborhood.

Your first consideration, therefore, with reference to resultful merchandizing must be to build your good name upon the bedrock of dependable quality and products which have earned the confidence of the people through persistent publicity and unvarying goodness of material and workmanship.

Remember that the average customer is not concerned about your views on astronomy or your opinions with relation to the tariff or your skill in making two hundred-yard drives at golf.

Your standing with your patrons and, consequently, the size of your income depend upon the expression of your personality through merchandise and service.

Of course, the other things help—popularity in the lodge, a good singing voice in the choir, or any other qualifications which you may have apart from your business. But, they do not influence the bulk of your trade nor can they make up for shortage of quality and service.

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Between Scylla and Charybdis

Scylla is the name of a dangerous rock off the Italian mainland opposite the whirlpool Charybdis on the Sicilian coast. The passage between them is fraught with peril. Hence has grown the graphic expression, current in nearly all languages, "between Scylla and Charybdis." It denotes serious perplexity out of which escape is difficult. The phrase aptly describes the situation in which the retailer finds himself with reference to buying goods in big quantities.

If he buys more than enough for the ordinary requirements of his store, will the wholesale prices decline or advance before he is ready to purchase additional supplies?

In the event of prices going up, he loses the profit which he might make between what he would have to pay now and the replacement value of the goods under the higher prices.

Professor Irving Fisher of Yale University, one of the shrewdest and best-informed economists in America, is quoted in the New York Times as saying:

"It is my own expectation that wholesale prices will shortly begin to rise and will rise very materially before they have another culmination. When, a few years hence, the next culmination does occur, it is not unlikely that we shall have a secondary crisis.

"But no one can, of course, tell with certainty what the future holds in store, and especially when so many of the factors are foreign factors and political in their nature.

"As to the past, the exact details of what has happened to the price level during the last few years, and why it has happened, will be the subject of study for years to come.

"But so far as the evidence at present available goes, there is nothing inconsistent with the view that the great secret of the changes lies in the fluctuations in volume of purchasing power, which purchasing power today means chiefly credit."

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Meet Your Customers

A politician tries to meet and get acquainted with as many of the voters in his district as possible. In order to be elected to office he must make a favorable impression upon them. The merchant who wants to gain headway in business should take a leaf from the book of the politician. No matter how much he may be occupied with affairs of his store, he should contrive to find time for a word of friendly greeting to the persons who come into his place to buy goods.

Turn over the routine work to your employes and stay as much as possible in the front part of your store. Meet the people as they enter. Get acquainted with them. Learn all you can about their likes and dislikes. Talk to them about the things in which they are interested, but avoid controversial topics as carefully as the politician does.

Afterward, when they come to your store, they will feel more at home because they will have a sense of acquaintanceship with you. They will, therefore, be more inclined to receive with favor the suggestions which you offer them with regard to the purchase of commodities.

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Keep a File of Business Suggestions

Have a file of merchandising suggestions, including samples of effective advertising copy. Don't trust to your memory for good ideas gleaned from reading trade journals, magazines, and books. Classify the material in your file according to some plan which suits your business and habits of thought. No matter how much you may be occupied with the day's affairs, spend a few minutes in consulting your file for tomorrow's and next week's business. This will greatly help you in systematizing your selling plans and keep you keyed up to continuous action.

Random Notes and Sketches

By Sidney Arnold

Every business man is eligible to membership in "The You-Bet-Eye-Kan Tribe," originated by E. C. Atkins & Company, Incorporated, Indianapolis, Indiana. Here are the qualifications for admission:

I RESOLVE.

(1) To keep a stiff upper lip and my powder dry.
(2) That I'll never be discouraged.
(3) That I'll fight hard for new business.
(4) That I won't be a quitter.
(5) To analyze myself daily to overcome my weakness.
(6) To have the courage to act on a sudden hunch.
(7) To get acquainted with those about me—I might like 'em.
(8) To be cordial—it's the better half of personality.
(9) To sing a song every day.
(10) To envy not the other fellow, but to get out and dig.
(11) To succeed.

* * *

F. M. Farber of Marshalltown Manufacturing Company, Marshalltown, Iowa, is very fond of dogs and knows more amusing stories about them than any man between Tampa and the North Pole. Here is one from his collection:

An Irishman wanted to sell a dog, but the prospective buyer was suspicious, and finally decided not to buy. The man then told him why he was so anxious to sell.

"You see," he said, "I bought the dog and thrained him myself. I got him so he'd bark all the toime if a person stepped inside the gate, and thought I was safe from burglars. Then me woife wanted me to thrain him to carry bundles—and I did. If you put anything into his mouth, the spalpeen'd keep it there till someone took it away. Well, one night I woke up and heard someone in the next room. I got up and grabbed me gun. There were there, three of the blaygards and the dog."

"Didn't he bark?" interrupted the other.

"Sorra a bark," was the reply, "he was too busy."

"Busy," asked the other, "what doing?"

"Carrying the lantern for the burglars," answered the Irishman.

* * *

C. E. Glessner of Excelsior Steel Furnace Company, Chicago, Illinois, attaches much importance to the individual's point of view in trying to reach a solution of any problem.

He exemplifies his attitude in the matter with this story:

"Now, then, Johnny," said his teacher, "if your father gave you seven cents and your mother gave you six and your uncle gave you four more, what would you have?"

Johnny wrinkled up his forehead and went into the silence for the space of several minutes.

"Come, come," said the teacher impatiently. "Surely you can solve a simple little problem like that."

"It ain't a simple problem at all," replied the boy. "I can't make up my mind whether I'd have an ice-cream soda or go to the movies."

* * *

My friend W. D. Sager of Chicago, Illinois, who sells Danville Stoves, tells about a school girl who was required to write 200 words about a motor car. She submitted the following.

"My uncle bought a motor-car. He was riding in the country when it busted going up a hill. The other 180 words are what my uncle said when he was walking back to town, but I know you wouldn't want me to repeat them."

* * *

Seizing opportunity with a firm grasp is the wise thing to do in advertising, says A. F. Fanning, sales representative Haynes-Langenberg Manufacturing Company, St. Louis, Missouri.

He furnishes an apt illustration in the following incident:

A Western evangelist makes a practise of painting religious lines on rocks and fences along the public highways. One ran: "What will you do when you die?"

Came an advertising man and painted under it:

"Use Delta Oil. Good for burns."

Memorial Day has a threefold application in America.

It commemorates the valorous deeds of the Civil War, of the Spanish American War, and of the World War.

This threefold significance is set forth in the following stanzas by Carlotta Bonheur Stearns, the talented wife of Ike Stearns of Michigan Safety Furnace Pipe Company, Detroit, Michigan:

Memorial Day.

1865—
Strew flowers o'er the waters dark
Where our lost sailors sleep,
And place upon the sacred mound
The flag a guard to keep.

The countless fields within our land
Where fell Columbia's flower,
Seem hushed and mystic and apart
Like holy shrine or tower.

Some are white with simple daisies,
Some gleam with golden wheat;
And through the land like sentinels
'Graved monuments loom replete.

In golden words the story telling
Where heroism abounds—
Blue and grey like demons fighting,
Then binding each other's wounds.

The tale of blessed brotherhood,
Whose sacrifice was the gain
Of bruited toil-worn creatures freed
From slavery's cruel chain.

1898—
Slim and straight as an obelisk,
By myrtle and pine caressed,
Stands the mast of the Maine, in Arlington,
Grim relic of hate suppressed.

1918—
Over there beneath the poppies,
In fields they drenched with blood,
Calmly rest our sons and brothers—
Our best of fine manhood.

Ah, losing you our best beloved
Hath bowed us 'neath the rod.
Each day we draw near you, who died
For Country and for God!

Minnesota Hardware Dealer Sold 51 Ranges in One Year in Town of 2,000 Population

The Peoples Trading Company at Warren Sell Their Ranges by Showing Prospects How Good They Are

The People's Trading Company, at Warren, Minnesota, have a reputation for being on the job and after business day in and day out.

That is why their dull days are few and far between, even though they are located in a small town in a farming community.

They also make it a point to let people know that they give at least as good values as the retail mail order houses.

That is why these concerns are not burdened with heavy orders from the vicinity of Warren.

One of the most important departments in this "Store of Good Values" is that of stoves and ranges, of which F. C. Larson is in charge.

In a recent letter to AMERICAN ARTISAN AND HARDWARE RECORD, Mr. Larson tells something about the methods employed by him in promoting the sales of Monarch Malleable Ranges, and this information is given in the following for the benefit of our readers:

"We have now sold Monarchs for about fifteen years and put all efforts on this particular range.

"Before we began selling Monarchs, another well known malleable range, handled by our competitor, had a great reputation in our community, and people would have nothing else.

"When we bought our first Monarch we felt we had the other fellow beat, and now we know it.

"By a little advertising, but mostly by plain facts on Monarch construction and fuel economy, we began moving them.

"Every range sold advertised itself, and our sales increased, so that a year ago we were able to handle a carload of 51 Monarch ranges, which is a very satisfactory business in a town of less than 2,000 population.

"Our selling methods can best be explained by an incident that occurred two years ago.

"A committee of four ladies came in to our store to look at a range for their parsonage.

"All these ladies had different makes of ranges, and one of them frankly informed me that 'I would have to go some' to convince her that there was a better range than her malleable (sold by our competitor).

"They were politely informed that every Monarch range is sold on its merits and that if in their judgment it was not the best range, we would not expect them to buy it.

"We demonstrated the range from top to bottom—showed the superiority of triple wall construction, the use of rivets instead of stove bolts and putty, the vitreous enameled oven and flue lining, and the rust resisting top that requires no stove blackening. We pointed out the advantages of the duplex draft, the perfect heat control; explained why a thin, unbreakable top heats through quicker than a heavy grey iron top, thereby saving fuel.

"Attention was also called to the heavy fire box lining, the tight grates, the beauty of the range, and plain trimmings which makes cleaning easy.

"The fact was impressed upon them that the Monarch factory considered every little detail that would lessen the work of the housewife.

"Then we gave them the price and tried to close the sale, but they were out to see all the ranges in town before making a decision.

"A little later they came back and said, 'Well, we have decided on a Monarch.'

"In reply to our question as to why they preferred a Monarch, we received this answer: 'Upon coming in to your store, you immediately waited upon us and so thoroughly demonstrated your range, that you had it sold before we left the store, but in fairness to the other dealers we felt obliged to give them a chance. They did not demonstrate and did not show any enthusiasm, merely gave us a price.'

"Three of these four ladies are now using Monarch ranges and the fourth has not bought a new range.

"We always have six or seven Monarchs lined up on the floor and do not use them for shelving, so when a prospect comes in we can immediately show a clean

YOU SAVE $25.00 ON EACH MONARCH RANGE

$25.00 LESS THAN OTHER MAKES OF LIKE SIZE

BECAUSE OF —

1. Car Load Purchase Which Arrived Some Time Ago.

This car load of famous ranges was bought last fall, thereby saving $30.00 per range. That, together with discounts we received with this large purchase, are passed on to you. You can buy the large 19 inch oven Monarch with 14 gallon all copper reservoir, $25.00 less than you will pay for any other malleable range of like size.

2. Standardized Production That Keeps Costs Down.

The Monarch folks are the only malleable iron range manufacturers that make all parts for a complete range in their own factory. Other makers buy the malleable castings elsewhere and assemble the range. This costs another manufacturers' profit. Monarch prices are kept down and its constructions improved by standardized production that other makes cannot give you.

Not Only Costs Less But LASTS LONGER

Walls That Cannot Eat Thru or Rust Out—Strong, Durable Construction

A range body rusting out is caused by the creosote gasses from burning coal. This starts corrosion which eats out the wall. Monarch walls are impervious to these attacks. In every part they are heavily enameled with Blue Vitreous, the only thing known to chemical science that will not corrode or rust.

Here is a range that is so built it cannot eat thru or rust out.

All joints in a Monarch are hand riveted, air tight. No chance is given for false draughts that eat up fuel. Hot Blast Fire Box saves fuel. It only takes about a bucket of coal a day to operate a Monarch Malleable Range.

Vitreous Enamel Interior

Monarch Ovens are made tight for all time by malleable iron frames that are rigidly riveted to all walls. Forty-eight more rivets than used in any other oven assure air-tight joints. Oven door double steel panel—insulated—equipped with thermometer. Door handle is of enameled wood—always cool. All ovens are oversize, some 17, 19 and 21 inches.

"And Be Sure to Start Housekeeping with a Monarch Range—it makes the work easier"

This carload purchase offers you great advantage to buy one of these famous ranges at last year's prices. No model or picture but the range itself is here for you to see. Take advantage of this offer NOW as our stock is limited.

Unsurpassed Beauty You Cannot Help But Admire it

Simple beauty marks Monarch design. Rough edges, and surfaces, corners that are hard to clean, useless nickel are all done away with. The whole surface of a Monarch is as smooth as a China dish. All you have to do to keep it clean is to wash it as you would a dish.

Besides, the Monarch has a mirror finished, highly polished top that requires no blackening and will not rust. This saves much labor. You can select either the leg base or cabinet style for exactly the same price.

All Monarch nickel parts are so heavily treated that no chance is given for pitting or rust. After years of use these nickel-trimmed parts will be as capable of bright finish as at first.

Monarch — This Store is right here in your community to back up the Monarch Guarantee. Don't take chances with the range you buy.

The Peoples Trading Co — The Store of Good Values — WARREN MINNESOTA

Monarch — Monarch Ranges are backed by 35 years of experience and UNCONDITIONAL GUARANTEE.

Full Page Advertisement on Monarch Malleable Ranges, Published by the People's Trading Company, Warren, Minnesota.

stove in any style.

"Of late years we have done considerable advertising through newspapers, circulars and booklets, also put on special sales.

"In short, any merchant who knows his goods and who is not afraid to get his hands dirty in making known the good points, will make a success of selling Monarch ranges.

"We never quote the price until after demonstration if we can avoid it."

Among the various kinds of advertising used by Mr. Larson we call attention to an attractive full page announcement recently published, a reproduction of which is shown on the preceding page.

Another piece of advertising matter which has been used to good advantage by the company, is a booklet entitled "Satisfied Customers," which contains the names of about 150 persons in and around Warren who are using Monarch ranges.

It is worthy of note that in this list, the local high school, one of the restaurants and two parsonages appear.

This booklet also gives the names of 26 persons who have bought the well known Rudy Warm Air Heaters.

Surely, it pays to "know" your merchandise—to be "sold" on it—and especially if you combine this knowledge with persistent and intelligent advertising, such as is done by the People's Trading Company.

Advertising Often Carries Far Into the Future.

We never know where our advertising ends, as it is barely possible that the advertising which you ran last week in your local newspaper may be selling the same kind of merchandise for you through the recommendations of satisfied customers many years hence, says Arthur A. Higgins of the Providence Gas Company in *Printers' Ink*.

It is quite possible that ten years from today two ladies will be visiting and the subject of buying a gas range will arise, and if the gas range which you sold yesterday has proved satisfactory through all those years, it is more than probable that the recommendation will be made to purchase one of that kind.

This is why it pays to be a little more than fair with a customer, as it is in this manner that your business grows.

If you give absolutely unsatisfactory service the customer's friends will know this, on account of the dissatisfaction given.

As one satisfied customer makes another, so does one dissatisfied customer make another.

Do you get pleasure from sending a customer out wearing a smile who comes in with a complaint?

This can only be done by the skilful training of those who handle complaints, but the energy expended pays great dividends.

Tells the Highest and Lowest Points in the World.

The difference between the highest and lowest points of land in the United States is 14,777 feet, according to the United States Geological Survey, Department of the Interior.

Mount Whitney, the highest point, is 14,501 feet above sea level, and in Death Valley there is a depression that lies 276 feet below sea level.

These two points, which are both in California, are less than 90 miles apart. This difference in height is small, however, as compared with the difference in the height and depth of land in Asia.

Mount Everest rises 29,002 feet above sea level, whereas the shores of the Dead Sea lie 1,290 feet below sea level, a total difference in height of 30,292 feet. Mount Everest has never been climbed.

The greatest depth yet found in any ocean is 32,088 feet, the depth at a point about 40 miles north of the island of Mindanao, in the Philippine Islands.

The bottom of the sea at this point is therefore more than 11½ miles below the summit of Mount Everest.

Community Work Is a Big Help to Your Business.

The idea of group action for the betterment of a neighborhood is taking strong hold in all parts of America.

Carried into practice it means cleaner streets and yards, playgrounds for the children, wholesome amusements, brighter homes, and the elimination of the "gang" spirit from the civic life of the people.

By taking a leading part in all these constructive activities the business man attracts favorable attention and wins the confidence of his neighbors.

The natural result is that he gains more patrons for his business and becomes a power for good in the community.

Urges Closer Cooperation Between Maker and Seller.

Why don't you, the manufacturer, take a trip to a few retailers' stores to see how they are presenting your product to the buyer? I believe you will find a condition at the counter of the retailer's store which will make you want to change some things quickly. I feel sure you will find a plan to help the retailer and his clerk who need help and are willing to take it, and a way to "talk turkey" to other retailers who may be misinterpreting you and your ideals to the customer. —Roy Dickinson.

Don't Neglect Side Lines.

By "side lines" is meant any articles which have a close connection with your regular line of goods.

For instance, if you sell razors, you ought to have no difficulty in selling shaving accessories, such as shaving brushes, shaving soaps and cream, strops, etc.

Household supplies suggest mops, mop handles, mop wringers, dish strainers, stove polish, stove pipe enamel, paints, varnishes, wall paper cleaner, and scores of other things.

Don't let the groceries, drug stores, mail order houses and department stores take your trade away from you by failure on your part to sell the people what they want in connection with hardware.

Good Ideas for Window Display

Practical Lessons from Exhibits in AMERICAN ARTISAN AND HARDWARE RECORD Window Display Competition. How to Get More Passers-By to Come into Your Store.

MAKES GAINFUL DISPLAY OF AUTOMOBILE HARDWARE.

Convincing proofs of the appropriateness of the term "automobile hardware" are furnished in the window display shown in the accompanying illustration, designed and put in place by G. V. White, for Sumner Company, Ltd., Moncton, New Brunswick, Canada.

An examination of the various articles shown in this display reveals an overwhelming percentage of goods which come logically within the stock of the hardware store.

It will be noticed that the designer of this window exhibit had in mind and succeeded in conveying the impression of safety in the operating of the automobile.

This impression is created in the first place by the strongly accentuated protection afforded by antiskid chains.

A nationally advertised product in this line is featured with good effect. Thus the store gets the advantage of the intensive publicity which has made this particular class of antiskid chains thoroughly familiar to car owners everywhere.

Many other articles of automobile hardware which find ready sale are included in the exhibit under discussion.

The entire display is so devised as to give the observer a composite picture of automobile hardware and to impress him with the completeness of the store's stock of these supplies.

The advantage of letting the people know that the hardware man has a comprehensive assortment of automobile hardware is that it draws many new customers to the store.

Motorists see in such a display things which they need. They come into the establishment and while purchasing some particular article of automobile hardware they glance about and have their attention drawn to other things which they require either for their car or for work around their homes or garages.

A display of automobile hardware, therefore, is not something distinct and separate from the ordinary business of the hardware store. It does not suggest side-lines. On the contrary, it presents the hardware store as a natural source of supply.

Window Exhibit of Automobile Hardware, Designed and Arranged by G. V. White for Sumner Company, Limited, Moncton, New Brunswick, Canada.

The Amateur Mechanic Wants Good Tools and Is Always on the Lookout for Additions to the Equipment of His Shop.

He Is a Willing Pupil and Is Open to Suggestions from the Hardware Dealer as to the Advantages of Buying the Best.

Written for AMERICAN ARTISAN AND HARDWARE RECORD by Jerry Gerlock, Hardware Merchant.

There's the *amateur mechanic.*

So many chaps like to fuss around their cars. Lots of them admit that they would rather work under the hood and around the engine than to sit behind the wheel on the road, and it seems almost true. Little do we sometimes know of the mechanical hobbies of our every-day customers. I know a prominent professional man who has a perfect workshop in his garage, all ceiled up, lighted and heated. It is his delight to don jumper and overalls, after his professional duties are completed, and betake himself to his workshop-garage. It's many a tool he uses in the course of a year, too.

Speaking of auto tools (for their name is legion), if you happen to drive a car, you know just what grade of tools are included in the average kit roll which comes with the car, and cheap tool kits are by no means confined to the flivver class, either.

There are three tools which are indispensable to every autoist, and you can verify this statement from your own experience—pliers, screw driver and wrench. I have had three new cars in the past few years and in trading in each successive car, I have held back certain A No. 1 tools which I have collected; I prefer to turn in the brand new ones which come with the new car—although new in name, they are poor in quality. I should include an auto jack and a tire pump, with the above, for your store can invariably furnish the new car owner with better tools than come with his car, and there are ever so many particular chaps (like yourself), who don't want "any old" tools in their kit.

Some men do more repair work on their cars than others; the more their ability, the more tools they will use, and the better are your chances for making sales.

This Advertisement Belongs to the Class that Brings Direct Returns in the Shape of Increased Sales of Specific Items.

Nor are all of our tools sold to the handy man, the carpenter, the mechanic or the auto worker—whether of the professional or "home grown" variety. At this season of the year, folks are thinking about that fishing or camping trip, or about opening up their summer camp.

These folks need certain tools, too. There's a very practical little tool for fishermen and campers in a little hand axe, fitted with a leather belt sheath, for carrying on the belt or in the kit bag. This, when combined with a heavy-bladed hunting knife (also in a sheath) furnish the wherewithal for getting wood for the brookside meal, or for building the temporary lean-to of boughs and branches. These facts have come to me by the direct route of first hand experience, and I believe you hardware dealers will be inclined to agree with me that this personal experience lends an enthusiasm to the sales talk, which makes it lots more appealing than "just a sales talk."

It is this personal enthusiasm which often lands your prospect's good money into *your* cash register.

I might say that this same sort of thing applies to the fishing tackle in your display case, which your prospect is asking about—but that's another story for another time.

And, speaking of tools, when you're selling a saw, hammer and nails to any customer who expects to use them in a summer camp, you won't stray at all from the straight and narrow road of honest suggestion, if you mention the advisability of adding a pair of wire-cutting pliers, a wood and a cold chisel and a wrecking bar.

These tools, at least, should be included in every camp tool box. Once last summer I had to give up a very necessary repair on my canoe from lack of a cold chisel to take out a seat which needed re-caning. We live and learn, and I find that these tools mentioned above go a long ways at camp. A great many tools are going to be purchased in these summer months for camp use, and your store might as well be one of them to make these suggestions for increased sales.

Of course, I do not want to intimate that business is going to flow your way on some mysterious high tide:

You must go after this business. And you can do that by telling folks about what you have, in your advertising space in your local newspapers. A good

window display of these common tools will help considerably, too, for it brings them more closely to the attention of your customers.

At this season of the year, there is a natural demand for lawn and garden tools; as a matter of actual fact, I know of one small town merchant who made a very special sales effort on lawn mowers and sold out what he had ordered for half of his seasonal stock in less than two weeks. Advertising, display and salesmanship did the trick—(only it wasn't any trick, at all—it was simply a common sense application of good business principles for selling seasonable goods *in season*).

Every housewife delights in sharp kitchen knives; these are the tools of the culinary department of the household, and the hardware store is the place where Madam Housewife is going to get them.

Those of you whose store is located in a rural district, dealing largely with farmers, will find a big opportunity for the sale of blacksmith hardware to the farmers. Professional blacksmiths seem to be a dying race—the young fellows run toward the mechanical work of the garage, and the old-fashioned and dyed-in-the-wool blacksmith shop is fast disappearing from our by-ways and cross-roads. This means that the farmer must depend more and more on his own ingenuity and this can be helped along tremendously by such tools as an anvil, a vise, a small forge, and a set of hammers, rasp and the like.

Many farmers do the cobbling work for their family, too, and here is another chance for selling a set of standard and lasts, cobbler's hammer, thread, wax, sewing and punching awl, and cut taps and leather.

The farmer uses concrete tools, for there is more construction work of this material every year.

Indeed, the tool department of the hardware store is well worth developing; there's the carpenter; the mechanic, the handy-man, the camper, the mason, the farmer and lots of other folks who will be coming to your store to buy tools. So let's get behind and boost this department and reap some of these good tool dollars this summer.

Prominent Hardware Company Leases Space in Chicago.

Having decided upon Chicago as a point of distribution for its products throughout the Central West, the McKinney Manufacturing Company of Pittsburgh, Pennsylvania, has leased a section of the North Pier Terminal Warehouse building in Chicago for a term of four years.

The McKinney Manufacturing Company is one of the largest producers of hinges, garage hardware, and kindred commodities in the world.

Trade Opportunities in Foreign Lands.

The Bureau of Foreign and Domestic Commerce through its Special Agents, Consular Officers and Commercial Attachés, is receiving information of opportunities to sell hardware and kindred lines in several foreign countries. Names and locations will be supplied on request to the Bureau in Washington or its District Offices. Such requests should be made on separate sheets for each opportunity, stating the number as given herewith:

34887.—A mercantile company in Italy desires to import hardware.

34888.—A commercial agency firm in Indian desires to receive quotations from manufacturers only, with a view to importing sand paper, emery cloth, tower bolts, hinges, files, hooks and eyes, hasps and staples, nails, wire, wood screws, locks, hammers, etc. No reference offered.

34896.—A trading corporation in Mexico wishes to secure catalogues, prices and samples, where practicable, of paints, varnishes and enamels. No reference offered.

34899.—A commercial agency firm in Italy desires to purchase hardware, etc. References.

34903.—A commission merchant in Honduras desires to secure an agency for the sale of general lines of hardware, etc. Reference.

Coming Conventions.

Metal Branch of the National Hardware Association, Hotel Cleveland, Cleveland, Ohio, June 3 and 4, 1921. George A. Fernley, Secretary, Philadelphia, Pennsylvania.

Mississippi Retail Hardware and Implement Association, Great Southern Hotel, Gulfport, Mississippi, June 14, 15, and 16, 1921. E. R. Gross, Secretary, Agricultural College, Mississippi.

American Society of Heating and Ventilating Engineers, Cleveland, Ohio, June 14, 15, 16 and 17, 1921. C. W. Obert, Secretary, 29 West 39th Street, New York City.

National Association of Sheet Metal Contractors, Fort Pitt Hotel, Pittsburgh, Pennsylvania, June 14, 15, 16, and 17, 1921. Edwin L. Seabrook, Secretary, 261 South Fourth Street Philadelphia, Pennsylvania.

National Retail Hardware Association, Louisville, Kentucky, June 20, 21, 22, and 23, 1921. Herbert P. Sheets, Secretary, Argos, Indiana.

Sheet Metal Contractors' Association of Ohio, Hotel Gibbons, Dayton, Ohio, July 19, 20, and 21, 1920. William J. Kaiser. Secretary, 123 East Chestnut Street, Columbus, Ohio.

Michigan Sheet Metal Contractors' Association Annual Outing, Grand Rapids, Michigan, July 29 and 30, 1921. Frank E. Ederle, Secretary, 1121 Franklin street, S. E., Grand Rapids, Michigan.

Kentucky Hardware and Implement Association, Jefferson County Armory, Louisville, Kentucky, January 24, 25, 26, and 27, 1922. J. M. Stone, Secretary-Treasurer, Sturgis, Kentucky.

Retail Hardware Doings.

California.

Blythe Furniture and Hardware Company, Blythe, has been incorporated with a capital stock of $25,000.

Illinois.

The Burkart, Baker and Ewend Hardware store, which is located at Second and Gooding Streets, Peru, is now open for business.

Iowa.

E. A. Smith has sold his hardware stock and buildings to L. C. Albright of Onawa.

O'Neill Brothers have succeeded B. C. Opfer in their hardware business at Waukon.

Minnesota.

O. S. Narverud will build a new hardware store at Hitterdal.

Arthur Hilk has purchased the hardware store of Pirgge Brothers at Lewiston.

The H. J. Borget Building is being remodeled into a modern hardware store for Bofenkamp and Son of Ellsworth.

North Dakota.

John L. Hagen of Milnor has bought the hardware business at Williston, formerly conducted by William Huseby.

Oklahoma.

Edward Roberts and E. C. Van Patton have formed a partnership for putting in a chain of hardware stores and have started by buying one at Nyssa with Mr. Roberts in charge.

Wisconsin.

Melvin Hoernel and Carl Barwick have purchased the branch hardware store of the Hoernel Hardware Company localted on Northwestern Avenue at Racine. They have changed the name to the Lincoln Hardware store.

The Ableman hardware store of Ableman has been bought by William Gall, Jr., Gus Volz and J. W. Meyer. The firm will be known as the G. M. V. Hardware Company.

Advertising Help and Comment

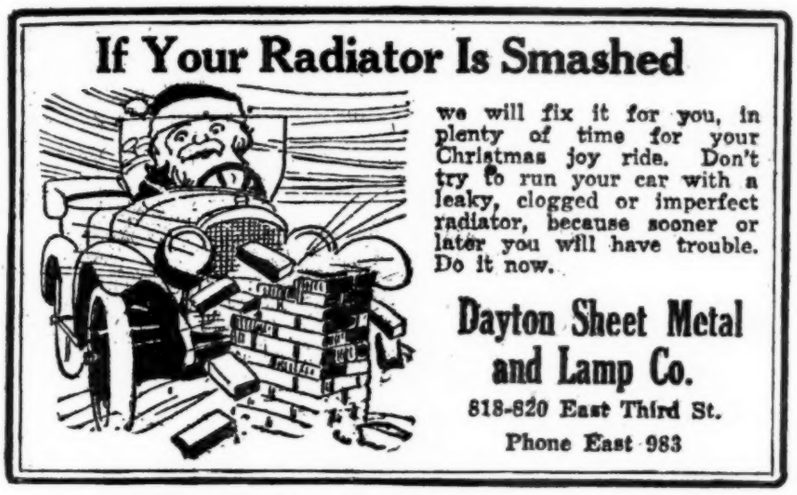
Send Us Copies of Your Advertisements. Let Us Help You Get Bigger Results by Advice and Suggestions. The Service Is Free. Don't Hesitate to Take Advantage of It.

There is an old fable about the ant and the grasshopper.

All summer long the grasshopper sings and dances while the ant industriously piles up food for the winter.

When the earth is bare and there is nothing more for the grasshopper to eat, his thoughts turn seriously to the question of food supplies for the winter.

Naturally, the ant refuses to share his hard-earned accumulations. The grasshopper falls victim to his own lack of foresight and expires of hunger.



The fable applies to business and particularly to that phase of it which has to do with advertising.

The most successful advertisers are those who accumulate ideas and suggestions for effective publicity.

When they are in a rush of business and it becomes necessary to prepare copy for some sale or seasonal presentation of goods and they have little time to devote to careful preparation, they can draw upon their store of suggestions and examples.

That is a good reason for reproducing herewith the advertisement of the Dayton Sheet Metal and Lamp Company, which appeared in the *Dayton Journal,* Dayton, Ohio.

There is a big profit in radiator repair work if the owner of the sheet metal shop will advertise to the general public that he is prepared to do this class of repairs.

The advertisement of the Dayton Sheet Metal and Lamp Company arrests attention and is certain to fix securely in the minds of the motor car owners the fact that the company is equipped to make repairs.

This advertisement is worthy of a place in the store of suggestions which every alert advertiser collects against the busy days or the times when supplies of ideas begins to run short.

Little change in the text is necessary to make this advertisement timely at any season of the year.

The word Christmas occurs in the advertisement. It could be left out or some other word substituted. The rest of the text needs practically no change.

* * *

The advertisement of the Van Camp Hardware and Iron Company, shown here in the same size in which it appeared in the *Indianapolis News,* Indianapolis, Indiana, carries a simple announcement to owners of garages.

It tells them that the Van Camp Hardware and Iron Company is headquarters for shop equipment.

It may or may not be true that the Van Camp Hardware and Iron Company is headquarters for garage shop equipment.

Webster's New International Dictionary defines headquarters as "the quarters or place of residence of any chief officer, as the general in command of an army, or the head of a police force; the place from which orders or instructions are issued; hence, the center of authority or order; also, the personnel of headquarters."

The secondary meaning is given as: "A chief or usual place of residence or business."

In the latter significance, as used by the Van Camp Hardware and Iron Company, it implies that the Company's store is the chief place of business in Indianapolis for the sale of garage shop equipment.

In this sense, it conveys the idea that the Van Camp Hardware and Iron Company has most of the trade in such equipment and is, therefore, in a position to offer the most comprehensive supplies from which to choose.

Without enlarging the space occupied by the advertisement, it could be made stronger by changing the wording to read:

"You can get anything you want in shop equipment at favorable prices from Van Camp Hardware and Iron Company."

In so small an advertisement it is important to place the stress upon the "you" instead of upon the "we."

Convention of the National Warm Air Heating and Ventilating Association Finds Outlook Encouraging.

As a Result of Practical Progress in Research at University of Illinois the Industry Is Better Able Than Ever to Give Service.

The National Warm Air Heating and Ventilating Association held its eighth annual convention on Tuesday, May 24th, at Hotel Winton, Cleveland, Ohio, with an attendance of approximately one hundred members and guests.

W. G. Wise, Retiring President.

The Executive Committee met on the preceding day at 2 p. m. and transacted considerable business in connection with the winding up of the work of the Association during the past year.

The Legislative Committee also held a meeting on Monday afternoon, during which the chairman, Edward Norris, Utica, New York, gave a brief outline of the activities of the committee since the beginning of the year 1921, the principal feature being the defeat of the Installation Code sponsored by the Western Warm Air Furnace and Supply Association and introduced in the Nebraska Legislature.

Mr. Norris read a resolution which after considerable discussion was recommended by the committee for adoption by the Association, in the following form:

"BE IT RESOLVED: That the National Warm Air Heating and Ventilating Association affirms its belief in the advantages of Warm Air Heating as the most healthful system known of warming and ventilating homes and other buildings; and that the growth of the industry will materially promote health and safety in the nation;

"That the National Warm Air Heating and Ventilating Association is heartily in favor of raising the standards of the industry and preventing practices which are in any way dangerous or unhealthful;

"That to this end it will approve of legislation or codes which prohibit unsafe practices, provided such laws or codes are the results of thorough engineering research checked by practical experience; but that it is opposed to all laws or codes not thus thoroughly established; and it is opposed to all discrimination by law between different types of heaters, accessories or methods of installation, it being recognized that many variations in design and engineering of installations must exist as the result of varying experience and opinion, and that to standardize them by law would tend to check invention and progress;

"That the National Warm Air Heating and Ventilating Association is earnestly in favor of raising the standards of knowledge and practice among installers of Warm Air Heaters; but that it is opposed to laws which would attempt to restrict the installation of Warm Air Heaters to those licensed by the State or Municipality, believing that such a system would prohibit many contractors of sound, practical knowledge of the art, but of limited technical education, from carrying on their trade, and thus tend to monopolize the industry; and that it is opposed to laws or codes which practically undertake the engineering and inspection of each installation by States or Municipalities, thus entailing large expenditures both by the public and by individuals with no proportionate gains.

J. T. Templeton, Elected Vice-president.

"That the Legislative Committee working with Professor Willard and proper committee of the American Society of Heating and Ventilating Engineers, the National Association of Sheet Metal Contractors and other interested bodies, prepare a code acceptable to all

interested parties and priotective of the interests of users, installer and manufacturer."

The convention was called to order at 10 a. m. Tuesday by President W. G. Wise, Akron, Ohio, who in his gracious manner expressed the appreciation of the officers for the large attendance and for the beautiful bouquet of American Beauty Roses presented by the Henry Furnace & Foundry Company, the Walworth Run Foundry Company and the Forest City Foundry & Manufacturing Company.

E. S. Moncrief, W. D. Cover, Robert Ketting and E. M. Stollenmeyer were appointed Sergeants-at-Arms.

Three new members were voted in, as follows:

Successful Heater Company, Des Moines, Iowa.

Ideal Furnace Company, Detroit, Michigan.

Richmond Stove Company, Richmond, Virginia.

After a number of communications had been read, President Wise read his address to the convention.

Treasurer I. L. Jones, Utica, New York, read his report which had already been audited and was accepted.

"It may be interesting to you to know that quite a majority reported increases ranging from 15 to 40 per cent. In fact this figure seems almost general enough to venture the suggestion that 20 per cent was probably the increase in goods manufactured during 1920 as compared with 1919.

"It will also be interesting to note that of the houses reporting a decrease the large percentage was 30 per cent, the balance naming a decrease of 10 per cent or less. Undoubtedly, every manufacturer recorded a marked falling off in orders during the last three months of 1920 and in goods manufactured the first part of 1921. However, the last half of 1921 may approach what we consider normal.

"While nothing more than an estimate, I imagine from the replies received that something like 30,000 to 35,000 more units were made in 1920 than in 1919.

"With the building of homes at probably the lowest possible ebb for years and while no doubt the demand for pipeless increased the production materially last year, it seems to me the showing which our industry

I. L. Jones, Newly Elected President; Allen W. Williams, Re-elected Secretary; and D. Rait Richardson, Member Executive Committee.

Secretary Allen W. Williams then read his annual report and again gave evidence of the high efficiency with which he looks after the affairs of his important office:

Annual Report of Secretary Allen W. Williams to the Convention of the National Warm Air Heating and Ventilating Association, May 24, in Cleveland, Ohio.

"I respectfully submit the following:

Statistics.

"As the Association has not deemed it best to undertake the collection of detailed statistics, the Executive Committee directed that the practice of a year ago be followed, namely, to make only one inquiry from the manufacturers which was as follows:

" 'What was your percentage of increase or decrease in the total number of furnaces (pipe, pipeless and room heaters) you manufactured during 1920 as compared with 1919? (The answers received were):

89 houses reported increases.

9 houses reported decreases.

3 houses reported no change.

4 houses replied "First year in business."

has made during 1920 was far from discouraging.

"Even if such a modest question as this is continued another year, it will undoubtedly have more value after our business recovers from war conditions and we are more certain of making normal comparisons, although a comparison of 1921 with 1920 will not be a normal one.

"If it is thought best to make an effort for more information, in the future, would it not be well to appoint a committee to formulate the questionnaire and to secure the approval of the members before sending out the inquiry sheets?

Collection Department.

Number of accounts received for collection to date	832
Amount of same	$92,083.65
Amount collected during the year	$13,047.10
Total amount collected to date	$56,910.93

"Our collection department is at your service, it is growing, as we collected over twice as much as during the same period a year ago, but more accounts could be handled if the members would make more general use of this department.

"May I remind you again that the Collection fees now charged by collection agencies are approximately 50 per cent higher than before the war, and that the Association makes no charge to the members for collections unless attorney is used and in something like 70 per cent of the items received for collection we have been able to secure the money without sending to attorney, which means a material saving.

Costs.

"Throughout 1920, our costs remained on the highest plane in the history of our industry. While some reductions may have occurred during the latter part of last year our members were not able to benefit to any material extent by such changes and the prediction made at our annual convention last May to the effect that the tendency was towards higher costs during the balance of last year has proved correct.

"I am sure our industry has given special attention to costs during the past year. Early in January, Mr. I. King of the National Bureau of Economic Research stated in the *Architectural Record* that 1921 will be a year of relatively low prices with advances predicted in 1922.

"In a pamphlet entitled, 'Overhead Expenses', issued recently by the Fabricated Production Department, Chamber of Commerce, of the United States, the following comments are made in reference to cost systems:

" 'Our Cost Systems are far too rigid. Under cost methods still largely in use overhead expenses are spread too thin in times of forced production and massed too heavily in periods of slight demand and production, giving in the former case costs which the market will not sustain.

" 'For the sake of convenience, we split up our business into years and treat each year as though it were separate, distinct, unrelated, whereas, no such sharp cleavage exists.

" 'Cost systems should provide that these expenses, usually designated as overhead expenses should be absorbed and pro-rated on the basis of a normal year—that 100 degree mark on the business thermometer.'

Advertising Department.

"While it is several years since the discontinuance of our advertising campaign, I wish to report that my office, has during the past year received numerous requests for our booklet, 'The Healthful Way to Heat Your Home.' There has also been a number of requests for newspaper electrotypes. Both of the above have been supplied.

"Our supply of booklets and cuts is nearly exhausted, so our advertising department is practically closed.

Honest Advertising.

"At the suggestion of one of our leading members, in October I called your attention to the serious mistake of making exaggerated or untruthful statements in any advertising copy or in over-rating goods in catalogues. This was not because the practice was general but rather exceptional although ambition might cause it to grow. It evidently met with the approval of the members to have our Association on record as opposed to anything of this kind.

Research Activity.

"The interest in this work has not only been maintained, but increased and the progress which Professor Willard and his capable assistant have made during the year has ttracted the attention of both those manufacturing Warm Air Furnaces and accessories, and of Heating and Ventilating Engineers and Architects. This is evidenced by the numerous requests received in my office for bulletins and other information.

"The Committee on Warm Air Furnace Research have given this activity very careful attention and have held frequent meetings at the University, which I have attended. Professor Willard has been good enough to address numerous conventions of dealers, both state and national, and spent much of his valuable time in explaining what has and what will be accomplished by the Research Work.

"I have had the pleasure of being present by invitation, at some of these meetings, and am pleased to report the dealers evidently appreciate our Research Work and are becoming to understand its value. I desire to advise you that at those meetings, Professor Willard when addressing our customers, never failed to give our Association full credit for promoting the Research Work.

"Professor Willard and our special committee have been equally active in presenting the progress that is being made to Heating and Ventilating Engineers. That it is meeting with their approval is indicated by the statement in the March issue of the *Journal of the American Society of Heating and Ventilating Engineers*, in which J. D. Hoffman, a recognized authority states: 'Data such as those being furnished by Professor Willard are making problems of design more simple and workable.'

"Many of the members are taking practical advantage of what our Research Work is developing and the inquiries I have received certainly indicate that manufacturers and installers appreciate the value of this activity.

Installation Formula.

"It is several years since the association issued an installation formula and the demand that came for the copies indicates the need of something of the kind. While it was not entirely satisfactory to some of the members, it was the best that could be done at the time, but in view of developments through the Research Work, I would respectfully suggest a new formula published as soon as practical. Further that in connection with the same great importance of good engineering, when installing the Pipeless, be pointed out and general rules for it included.

Better Chimneys.

"The vitally important matter of better chimneys and proper flues, which mean so much for the best operation of our goods and protection against fire, has been given special attention through the year.

"One third of the annual fire loss is attributed to defective chimneys, and the National Fire Underwriters assert that in money this yearly loss is from 15 to 20 millon dollars, and we are all aware that a good flue is the first requirement for a satisfactory installation. The National Board of Underwriters were good enough to invite and accept our cooperation and advice, and also that of the American Institute of Archi-

tects, in formulating a new ordinance or code for covering chimneys.

"The National Department of Agriculture also referred to our Association for criticism, copy for a bulletin on this subject, which they will publish on chimneys and have accepted suggestions made by our Research Committee. Mr. P. J. Dougherty has assisted materially in these two matters.

Association Trade Mark.

"Requests from the members for electrotypes of our Trade Mark have been more general and this seems a good opportunity to urge the members to use it. During the year two or three cases were called to my attention where non-members were using it without our consent and as our Trade Mark is copyrighted, it was not difficult to secure discontinuance in such cases.

careful attention and directed the work in my office during the year. I have coöperated with the local associations of Warm Air Heater Contractors under the direction of President Wise, and we have endeavored to make our Association helpful to them.

As usual, we are under obligation to the Trade Press for the high grade publicity they have given our activities. They are constantly reminding me that their columns are open to writers on subjects of Warm Air Heaters and their accessories. I respectfully remind you of this and urge our members to take more advantage of this opportunity.

"I do not believe it is necessary to request you to bear in mind that your Secretary is at your service for any matter, whether directly or indirectly connected with our industry and your suggestions and constructive criticism will be helpful and always welcome.

Professor A. C. Willard, in Charge of Warm Air Furnace Research Work at Univedsity of Illinois, and V. S. Day and A. P. Kratz, Research Assistants.

Prospects.

"Much has been published and said in reference to the shortage of houses, even to the extent, that it is one or two million that should be built within the next five years. Such statements seem to be large theory, but it is evident that even a modest supply of such a demand will assure a large market for our goods for several years to come.

"Some one has said that the United States is the only great nation that has ignored housing as a national problem, but that if this is true, private enterprise will no doubt be equal to the occasion, and we already know every possible agency is urging that building receive special encouragement.

In General.

"The year that is passed has been an active one for our Association, and it is a pleasure once more to acknowledge my sincere appreciation of your good nature and patience during the unusual conditions that have existed.

"President Wise, together with the Executive Committee have given our Association affairs constant and

"It seems fitting to refer to the death of Professor John R. Allen, which occurred in October, 1920. His services to our industry were of such marked value that his loss will be most keenly felt."

At the close of Secretary Allen's comprehensive report came the reports of the Eexcutive Committee and of the Legislative Committee and at the close of the latter, Chairman Norris moved the adoption of the resolution quoted in the foregoing.

Considerable discussion followed as to the advisability of attempting to prepare an Installation Code for presentation to State Legislatures at this time, but after all the vote for adoption of the resolution was unanimous, and thus we may expect that in the not very distant future—possibly within a year—a real, practical code will be worked out on scientific and yet broad enough lines so as to avoid restriction of efficient installers who may not be posted on theory.

W. H. Barr, Buffalo, New York, president of the American Foundrymen's Association, spoke on the subject of "A Foundry Problem," reviewing in very

effective manner the "Declaration of Principles," recently adopted by the American Federation of Labor, and showing how in many respects these "principles" were either meaningless, absolute platitudes or entirely unfair in their practical application and results.

Mr. Barr is an ardent advocate of the unrestricted open shop—the sort of working place where the employer has a fair chance to progress in efficiency and to progress with this increased efficiency, into higher responsibility; his exposition of the fallacy of unionism, as expressed in the "Declaration of Principles," was masterful and his address was received with high applause.

As customary, luncheon was served in the Convention Hall, and it was a hungry lot of men who sat down at this time, for it was past one o'clock.

At 2 p. m. sharp, President Wise called the meeting to order again and introduced F. R. Still, vice-president of the American Blower Company, Detroit, Michigan, who spoke on the subject of "The Use of Fans in House Heating."

Mr. Still had two sizes of his apparatus on exhibition and from the data furnished by him, it is evident that there are great possibilities in the adaptation of small fans to warm air heating systems.

The main paragraphs of his address are as follows:

Address on Small Blowers in Combination With Furnaces for Domestic Heating Plants, by F. R. Still.

"The open fireplace is probably the oldest form of a stationary heating plant for warming buildings. As the stove can not be considered a stationary heating plant then the next oldest and by far the most generaly used for domestic heating aside from the stove, is the warm air furnace. Regardless of its popularity and the vast number of installations, as well as the simplicity of its construction and operation and the many years it has been employed as a heating medium, there is available less fundamental engineering data regarding the furnace than any other device used for a similar purpose.

"Nobody knows definitely the range of heating capacity for any type of furnace, when varying volumes of air are passing over the heating surfaces, nor the limiting ratios of heating surface to grate surface, nor the right size to make the combustion chamber for a given ratio of heating surface to grate surface, nor the most effective disposition to make of the heating surface in order to get the maximum transfer of heat to the air.

"The same lack of information about the furnace itself, applies with equal force to the velocity of the air through the ducts, flues, elbows, wall boxes and registers, throughout the range of varying temperatures of air and with the varying heights of flues above the crown of the furnace; neither is anything known as to what the frictional resistance amounts to in the various parts of the furnace plant from the point of fresh air supply to the place where the warm air is discharged into the room.

"The design, construction and installation of furnaces should be an engineering proposition, just as much as any other method of heating, and it should be established on the same basis. In order to do so, the factors recited above must be separated from one another and be definitely established. This will entail a long period of experimental research, which it may take years to complete.

"Therefore, until such time as an engineer or architect has in his possession definite data which will enable him to predetermine just what he may obtain, with absolute assurance of the results, the same as he now can do when designing steam and hot water plants, he will naturally hesitate to recommend a furnace heating plant to his client, regardless of the fact that it can be installed more cheaply and may in some cases be more easily adaptable to the building than any other system.

"The main objection to a fan or blower has been the first cost and the cost to operate same. This has been mainly due to the fact that almost invariably the inventor has depended on the blower to handle all the air that passes over the furnace, all the time, regardless of weather conditions. When shut down, it usually became such an obstruction to the flow of air that the plant failed to do even as well as an ordinary heating plant would do, when operating simply as a gravity plant.

"What is wanted is some device that will not obstruct the flow of air, when it is not in operation, to any greater extent than if it had never been installed. It must be inexpensive to install; must be inexpensive to operate; must be so simple to operate that it requires nothing more than the touching of a push-button to start or stop it; must be so simple to install that it requires no engineering or mechanical skill to do it; it must be adaptable to all kinds of buildings and it must have sufficient capacity to deliver the required volume of air against the normal resistances of the average heating plant, so as to heat all the rooms to an even and comfortable temperature in any weather.

"We have made an effort to produce such a device, and so far as our experiments and investigations have gone, they have left us with every reason to believe that we have succeeded in perfecting a unit which will do all that could reasonably be demanded of it. Before we had completed our developments, the worst of the winter weather was past, so we have not had an opportunity to try it in as many places nor in as many different situations as we would have liked to do, to enable us to present it to you with the same assurance of its absolute dependability that we have of all of the other apparatus we make. Wherever we did install it, the results were entirely satisfactory; so much so that the people refused to have it removed after we were through with our demonstrations.

"We have charted the full range of the capacity of the new device; we know what it will do as an air moving mechanism, but for want of definite and authoritative information as to the limitations of furnace capacities, it becomes more or less of a cut and try proposition especially on such plants as approach at all closely to the maximum limits of the capacity of the device.

"We do not mean to imply that there ever was a furnace plant which failed completely to heat all of a building; nor do we mean to imply that all of the furnaces fail to heat some portion of a building; but we all know that there are many of them which fail

to heat certain rooms under some weather conditions, or require forcing of the fire to obtain sufficient heat to give satisfactory results at times.

The device we have produced is primarily intended to relieve such conditions, though it should also prove to be a source of considerable economy when used in connection with a furnace plant that otherwise operates satisfactorily. This economy is to some extent obtained by heating the building more quickly, when the temperature has become low, like the conditions which prevail in most houses in the morning, after the furnace has been checked all night.

The greatest saving of fuel is due, however, to the ability of the device to circulate as much or more air at a low temperature as would be the maximum volume obtainable by gravity circulation at very high furnace temperatures.

"The possibilities for the sale of this or some similar device seem almost unlimited in extent. It should engender more faith in the reliability and economy of furnace heating than has heretofore been possible and by so doing should give considerable impetus to the business. It opens up an avenue to additional business for the jobbers and dealers in furnaces, who can go to nearly all of their old customers and make additional sales. If our limited experience is any criterion, a demonstration in any furnace heated house is about all that is necessary to dispose of the outfits.

"One thing to remember is this: Don't expect this little device to do anything abnormal. It has been developed with the one idea of producing constantly, the same results as can be obtained by a gravity furnace heating plant, when properly selected, when installed under the most favorable conditions and when operated in an ideal manner. Those are three factors seldom in combination in one plant. The device we have produced is intended to bring them into closer combination at all times and to make up for either one or perhaps two of them being deficient, or perhaps entirely missing, rather than to perform any fancy or unusual stunts. When any of the latter are to be tried out, select a blower large enough to handle all the air and drive it at a speed that will overcome every possible resistance. In no other way can such things be done.

"The time has long since passed when 'rules of thumb' methods in engineering practice will be tolerated. Everything the engineer has to deal with must have back of it definite and dependable data that he can rely upon with absolute certainty. What we have aimed to do is to produce a little, dependable, inexpensive device, that can be applied to any domestic furnace, either old or new, and by having such a thing available, it is hoped it will in some measure at least, restore any lost confidence in furnaces, bolster up the minds of any 'doubting Thomases,' and at the same time fill a real want in the furnace trade."

Jesse McHenry, St. Louis, Missouri, spoke very interestingly on "Areas and Surfaces of Warm Air Heaters," showing the necessity for greater accuracy and more consistency in the rating of warm air heating apparatus.

Professor A. C. Willard, director of the very important experiments and tests that are being conducted at the University of Illinois, under the auspices of the National Warm Air Heating and Ventilating Association, was then called upon to review the new bulletin, No. 120, which has just been issued by the University, and which is entitled "Investigation of Warm Air Furnace and Heating Systems."

From the tests which had been completed, Professor Willard said it is evident that one of the most important points to keep in mind is that the chimney must always be taken into consideration when one is talking about heating capacity of a warm air heater.

Professor A. P. Kratz and V. S. Day, who have so ably assisted in this important work, reviewed some of the parts of the bulletin for which they were directly responsible.

The Nominating Committee recommended that the following be elected as officers and members of the Executive Committee, their recommendation being accepted by unanimous vote:

President—I. L. Jones, Utica, New York.

Vice-President—J. T. Templeton, St. Louis, Missouri.

Secretary—Allen W. Williams, Columbus, Ohio.

Treasurer—John Kerch, Akron, Ohio.

Executive Committee—D. Rait Richardson, New York City; W. G. Wise, Akron, Ohio; R. A. Patten, Philadelphia; R. Pope, Cincinnati.

The newly elected president spoke briefly, assuring the Association of his sincere desire to bring the organization to a still greater degree of usefulness to its members; he also urged that the members continue to coöperate toward this end.

In the evening a sumptuous dinner was served.

A fine program of vocal and instrumental music was rendered during the dinner and the occasion was enlivened by impromptu speeches by man members. per program herewith, each prominent person being acted without special notice to the speaker, the toastmaster being thoroughly impartial, or at least seemingly so, in his selections for the various parts.

"Bob" Ketting, President Jones, J. D. Spurrier, "Jim" Dougherty and M. Geddes were the lucky possessors of the winning numbers in the prize drawing.

As a result of Professor Willard's suggestion, a committee is to be appointed to investigate the matter of erecting or procuring a "Test House," in which manufacturers of warm air heating apparatus may have a typical apparatus of their make tested under the supervision of the University of Illinois, and thus secure absolutely reliable data on which to rate their product.

Among the visitors were R. Blanchard and Jim Robinson, of the Hart, Cooley Company, New Britain, Connecticut.

Both Arthur P. Lamneck and his brother, William E., took a prominent part in the discussions and other activities of the Convention. Arthur is the President of the National Association of Sheet Metal Contractors who will meet at Pittsburgh from June 14th to 17th, inclusive.

Copies of Bulletin 120, Volume 18, Number 29, in which is contained the third installment of the series on Warm Air Furnace Research may be secured from the University of Illinois, at the price of 75 cents.

Practical Helps for Tinsmiths

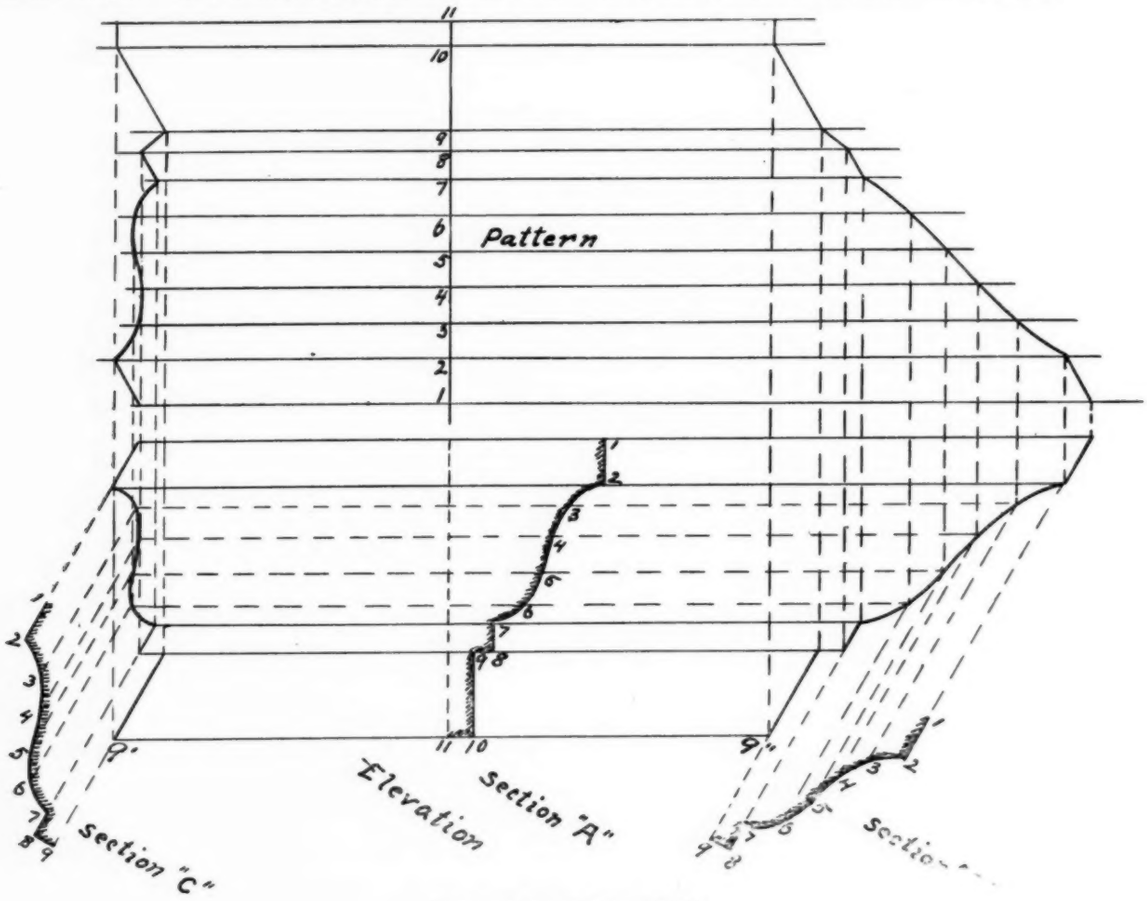
No Two Jobs Are Exactly Alike. Therefore, the Sheet Metal Worker Has to Meet Each Difficulty as It Comes. Send Your Problems to Us. Let Our Experts Help You.

PATTERNS FOR RAKING GABLE.

By O. W. Kothe, Principal St. Louis Technical Institute and Instructor in the David Rankin, Jr., School of Mechanical Trades, St. Louis, Missouri. Written especially for American Artisan and Hardware Record.

To help ornament door-ways and the like, small gables are often set over the entrance and these are sometimes full gables and other times broken pediments. In cases of this kind the returns are short of only about 10 to 20 inches long, while the moulding of the gable is considerable longer. In this way the gable moulding section "A" is the normal detail and those on the ends are modified. Observe in order to have the flat members run in a vertical position the lengths are changed, and hence, different girths are made. So first draw a pitch line as 9′-9″ to represent the pitch of gable. At right angles to it, detail the normal section "A." Divide all curved lines in equal spaces and from each one of these points, extend a line both ways parallel with line 9′-9″.

Then at any convenient place make a reproduction of section "A" with all its points and set them in position "B" and "C." This can often be done very rapidly by transferring the width of spaces on a paper strip and then using a paper strip instead of these sections. Other times the section "A" is detailed on a small loose piece of paper and when the lines in the elevation are projected this loose piece of paper with section "A" is transferred into the position of "B" and also "C." From these points we erect vertical lines to interesect with those drawn from "A." Through these new intersections, draw modified section and you will have the girth for the end returns. These would be developed the same as any square miter and of course, using the girth picked direct from the elevation.



Patterns for Raking Gable.

To set out the pattern for the gable, we draw a line at right angles to 9′-9″ and on it we set the girth taken from section "A." Draw stretchout lines to each of these points so they are parallel with 9′-9″. From each point in the modified section on each end, project points to the stretchout, thus cutting lines of similar number and which enables tracing the miter cut as shown in pattern. This method can be easily followed no matter what the design of moulding is, or the size of cornice.

The expensive Upkeep of "getting along" with a Makeshift.

Parker Supply Company Is Reorganized.

The wide popularity and the fast growing demand for Parker Products necessitated additional machinery and equipment to meet the demands of the trade, with the result that the capitalization of the Parker Supply Company, the manufacturers, located at 780 East 135th Street, New York, has been increased to enable a wider range of activity and permit of greater production.

D. L. Boyd, Secretary and General Manager.

Through this reorganization several prominent engineers have become financially interested in the Company and J. G. White Management Corporation has assumed the management of the Company.

The entire personnel of the organization has undergone a change, and the following officers were elected at a recent meeting of the Board of Dirctors:

Walter Rautenstrauch, President, Professor of Mechanical Engineering at Columbia University, and Vice-President of the J. G. White Management Corporation.

William S. Bowen, Mechanical Engineer, Vice-President and Treasurer.

D. L. Boyd, Mechanical Engineer, Secretary and General Manager, formerly Industrial Engineer with the J. G. White Management Corporation, Production Manager Mennen Company, Production Manager The Mergenthaler Linotype Company.

The officers, as elected, in cooperation with the J. G. White Management Corporation, will guide the policies of the reorganized Company, and some very interesting improvements are predicted.

H. Rosenberg, inventor and patentee of the many patents covering Parker Products, and who was president of the Company since its inception, has sold the controlling interests to the new syndicate, and has leased the patents to the Company. Mr. Rosenberg will now act in an advisory capacity for the designing of further patents and improvements of new items. In this connection the Company expects to bring forth several valuable improvements in specialties for the hardware and sheet meta ltrades.

The Advertising and Sales Departments are also getting their full share of the benefits of the organization abilities of the new management, and an intensive advertising and sales program, embracing publicity in the leading dealer and consumer trade publications has been outlined. This department is under the direction of Charles S. Trott, who has now been connected with the Company for seven years.

Weighed in the scale of public approval.

Tempering Copper by the Ancients Is a Myth.

The general belief that the ancients were able to harden or temper copper to a greater extent than is now possible is a myth, in the opinion of the United States Geological Survey, Department of the Interior.

It is well known to metallurgists that processes of rolling will harden copper to some extent and that it can also be hardened by the addition of other metals.

Specimens of ancient so-called "tempered" copper that have been examined have invariably proved to be no harder than copper that is manufactured today, or to be simply an alloy of copper and some other metal.

Springfield, Illinois, Local Elects Officers.

With an attendance of one hundred per cent, the meeting of the Springfield Sheet Metal Contractors' Association, Springfield, Illinois, held May 17, 1921, elected the following officers for the ensuing term:

President: Andrew Schmidt.
Vice-President: Fred Graeff.
Secretary: J. A. Neuman.
Treasurer: Charles Bolinger.
Trustees: H. K. Wilson, William Fiebrantz, and G. J. George.
Conference Board: Joseph Farris, Fred Graeff, G. J. George and J. Foster.

Secures Good Mechanic Through Ad in AMERICAN ARTISAN.

To American Artisan and Hardware Record:

I have secured a good sheet metal worker through my advertisement in your paper, and will ask you to discontinue the advertisement as I have a list of replies as long as from here to Chicago. I surely appreciate your good work.

Yours truly,
W. A. Standen.

Eau Claire, Wisconsin, May 21, 1921.

Larry Hathaway Joins Lincoln Steel Company's Sales Force.

The sales force of the Lincoln Steel Company, Chicago, Illinois, has been increased by the accession of Larry Hathaway, who was formerly connected with A. M. Castle & Company at Chicago.

What Is Your Chief Selling Point?

The manufacturer need never worry, so long as ingenuity starts with the product itself and same cleverness in its make-up, use, efficiency.

But when an advertising account has no such foundation upon which to build, it suffers a natural handicap.

Such items, small sometimes in themselves, mean much in merchandising. They are more valuable in advertising than mere arguments in favor of the use of a thing, its quality and the long business record of the house producing it.—*Printers' Ink.*

Keep Your Shop Open During Business Hours to Get Business. That's Why You Pay Rent for the Shop.

If a Salesman Can Not Get into the Place Because the Door Is Locked, How Can a Customer Get in to Transact Business?

Written Especially for AMERICAN ARTISAN AND HARDWARE RECORD by J. C. Greenberg, Peoria, Illinois.

(Copyright, 1921, by J. C. Greenberg.)

I could never quite understand just how some sheet metal men get enough money out of their business to make a decent living.

The reason is that in my many calls among the trade I always find a good big percentage of the shops closed.

In the morning after 8:30 the place is closed. At noon they are out to lunch. After lunch the place is closed again till quitting time, and after that time, it is too late to do any business.

Here is what I am driving at: If a salesman can not get into the place because the door is locked, how in Sam Hill can a customer get in to transact business? What is the use of paying rent for a store if no one can use it as a place of business? It is too expensive to store tools in and still more expensive to keep locked all day.

What would you think of a grocer, a cigar store man, a druggist, or a butcher who has a store and is out all day leaving his store locked? Suppose you wanted to buy something, came to the store and found it locked? What would you do? You would at once look for a like store that was open for business. You certainly would not sit on the doorstep and wait.

It is the same way with your customers. If your store is locked all day, you are merely helping your competitor get your business. Do you wonder why some sheet metal men are not getting much business? It is a logical course of events that a place which is locked all day can not do business.

Depending on the crowd in which you happen to be, the "open shop" arouses bitter passions or elicits complacent approval.

The "closed shop" is fiercely defended by thousands of our fellow citizens.

There is one view of the open shop which is certain to cause no controversy anywhere. It is the view which insists that the shop be kept open during business hours in order to get more business.

Opinions may differ regarding the "closed shop" in labor relations but there is no room for difference concerning the wastefulness of the closed shop which is used only as a place in which to store tools during working hours.

Right here is where you and I have a good-natured scrap. You, if you are one of the "closed up shop all day" have no defense to offer because I will show you right now that you are wrong.

Let us go away back to the time when you first thought of going into business. The first thing you thought about was that you wanted to give good service in order to get the public to like you and patronize you. Let me remind you that you can not possibly give service unless you are there to serve.

You as a business man have no right to have one customer take up all your time at the expense of all other customers. In other words, you can not afford to go out on a job and lock up your place of business so no one else can use your services.

When you were a journeyman tinner, you were, let us say, 100 per cent tinner. You knew all about the trade, and relied on yourself to do a good job. Then, you rented a place, put a sign over the door, and you allowed that you were a business man.

You overlooked a big bet in your excitement to be a boss. You forgot to reckon that a business man is not a workman—he is a business getter. You did not figure out that as a busines man you had overhead, profit, and cost to take care of, and here is what happened.

You have entered into a mess of new things that you did not think of, and stayed wrong since then.

When you decided to enter business, you took upon yourself the duties of an executive, a financial man, and a salesman. That is, you must be able to engineer your business, to get the money to run it with, and to sell the things you make. In doing all of these things, you certainly must realize that you can not spend your time in overalls and sell your time for a dollar an hour.

The real business man can hire muscle and tools. The real business man is a planner of his business, and uses his brains, not his muscle.

You as a business man should be out after new business and increase thereby your financial standing in the bank.

If you must go out and work, if you must keep your workshop locked all day, you are merely a journeyman tinner with a swell place for your tools—that's all.

I want you, the reader—if you are one of these little locked shop men—to wake up to some facts. These are the facts you want to get into your noodle, and get them there right quick. Here they are:

"I must have a clean place, so my customers will enjoy coming."

"I must have work to assign to my man, or men."

"I must look over my mail, and answer all letters now."

"I must mail all bills, so I can have money to run business with."

"I must speed up slow accounts."

"I must arrange to discount all bills due now."

"I must make a list of all stock needed."

"I must estimate and figure all new jobs."

"I must see, or write, or telephone all prospects."

"I must see to it that my show window looks attractive."

"I must prepare a little newspaper copy for advertising."

"I must read mail, trade magazines, and advertising matter."

"I must make a list of things for tomorrow."

Now then, brother, these things are absolutely necessary to the success of yourself as a business man. How on earth can you ever expect to attend to your business unless you are there to attend to it? How can you ever expect to succeed if you are not on the job where you belong?

Please remember, you are supposed to be a business man, and transact business. You are not fooling anyone but yourself if you insist on hiding yourself in overalls and sell yourself to yourself for a dollar an hour.

If a fellow ever comes to you and tells you that he is a good business man, and is looking for a job as a business man, and is willing to sell his ability for a dollar an hour, stay clear of him—he is not what he says he is.

Yet, you—my little closed shop friend—are trying to make yourself believe that this very thing is possible. Wake up, and become a business man. Get business. Transact business. Be open for business. Advertise your business. Make profit out of your business.

Just look over the shops in your town, and see how many of the real shops have their boss in overalls, or keep their place of business closed all day.

Remember that any good sheet metal man can do a good sheet metal job. But any good sheet metal man can not be a business man. Just think this over, and if you love your overalls, the hot roof, the ladders and tools, just give up your store and save money for yourself.

On the other hand, if you love your business, your books, your customers, your banker, your wholesaler, your salesmen, your family, yourself and your success, ditch the blue jeans, and be a real business man. You are bound to get there—they can't keep you down. That is—if you really love it.

How do you stack up, my friend?

Wants to Know Where to Buy Special Sizes of Tin Plate.

To American Artisan and Hardware Record:

Will you kindly advise us where we can purchase 4X tin plate in 30 x 120 and 30 x 96 lengths?

Yours truly,

S. D. Helm Manufacturing Company,

Crawfordsville, Indiana, May 21st, 1921.

Sheet Metal Contractors of Missouri Form Organization.

With a commendable showing of forty charter members, the Missouri Sheet Metal Contractors' Association was organized May 26, 1921, in Hotel Claridge, St. Louis, Missouri.

This noteworthy achievement in behalf of the interests of the sheet metal trade of Missouri was brought about largely through the untiring and enthusiastic efforts of the Jobbers' and Salesmen's Auxiliary of Missouri.

Frank B. Higgins, Treasurer, Missouri Sheet Metal Contractors' Association.

The meeting was called to order by Frank B. Higgins, first vice president of the National Association of Sheet Metal Contractors.

The purposes and advantages of organization constituted the main topic of the opening session.

It was felt by those in charge of the work that the Association should start out with a clearly defined understanding of the necessity and possibilities of organization for the betterment of their business and for more helpful and profitable service to the public.

In order to encompass these ends, it was shown that

H. W. Symonds, President Missouri Sheet Metal Contractors' Association.

it is essential to develop a just and liberal system of trade ethics.

While such a system of ethics is not mandatory in the sense of a legal statute, nevertheless by coordinated thought and practice it can be evolved into a code of business conduct which will promote the common good of the trade.

So sound and reasonable are the principles thus explained to the sheet metal contractors who gathered in this first meeting that they were accepted without question or debate.

The Missouri Sheet Metal Contractors' Association, therefore, begins its career in the most favorable circumstances with regard to understanding of these principals and a strong and friendly fellowship.

A constitution and set of by-laws devised in such a manner as to give the best expression to the aims and intentions of the organization were adopted. Then came the election of officers which resulted in the selection of the following members for the first term of the newly formed association:

President: H. W. SYMONDS, St. Louis;
First Vice-President: L. H. DORN, Joplin;
Second Vice-President: M. G. THIEMAN, Concordia;
Secretary: OTTO E. SCHESKE, St. Louis;
Treasurer: FRANK B. HIGGINS, St. Louis.

In the evening, the forty charter members of the newly organized Missouri Sheet Metal Contractors' Association were entertained at a banquet by fifty-two members of the Missouri Jobbers' and Salesmen's Auxiliary. At what turned out to be a veritable love-feast, the sheet metal contractors and the auxiliary folk improved to the utmost this opportunity to become more intimately acquainted with one another. The banquet marked the beginning of many pleasant friendships which are certain to redound to the good of all concerned.

Lewthwaite Front Lever Punch Has Adjustable Gauge.

The illustration herewith gives a fairly clear idea of the Lewthwaite front lever bench punch. It has an adjustable gauge. The punch is held in place by a coupling nut screwed on end of plunger. The die can not get out of the alignment with the punch because it is let into the bed of the machine. The shaft, plunger, and coupling nut are made of hardened steel. The body of the punch including handle socket and connection are made of malleable iron. All parts of this front lever punch are interchangeable, and can be obtained without trouble from the manufacturer, T. H. Lewthwaite Machine Company, 415 East 31st Street, New York City.

Lewthwaite Front Lever Punch.

The Lewthwaite front lever punch will punch up to 13/32 inch hole through ¼ inch steel or 11/32 inch hole through 5/16 inch steel, and takes up to ½ inch exact punches.

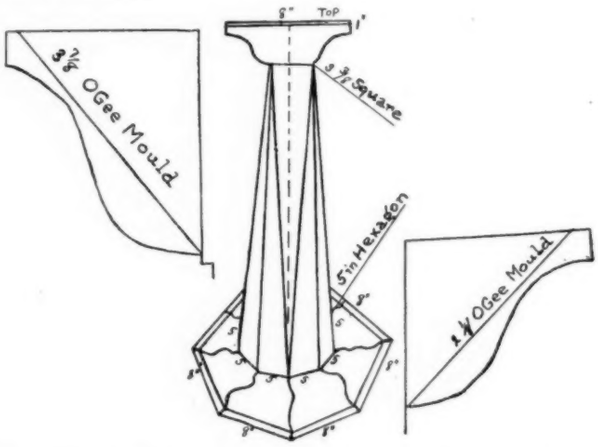
The distance from the front of the bed to the center of the die is ⅝ inch. The throat is two inches deep back to the center of the punch.

This is a labor and space saving punch which is sure to earn its way in any well equipped shop. Prices and particulars may be obtained by addressing T. H. Lewthwaite Machine Company, 415 East Thirty-first Street, New York City.

Sends Sketch of Pedestal for Practice Work.

TO AMERICAN ARTISAN AND HARDWARE RECORD:

A good violinist has to practice every day of his life in order to keep himself in good condition as a player. The sheet metal artisan who wishes to be more than merely a workman must, to some extent, imitate the violinist.



Sketch of Pedestal for Practice, with Profile, from Hexagon to Square.

He must from time to time practice the finer things of his craft in order that his brain and hand may not lose their cunning and dexterity.

That is one of the reasons why I am sending the enclosed sketch. It calls for skill and affords excellent practice in the finer qualities of workmanship.

Don't ask me for patterns, just sit down and figure out the methods and proportions for yourself.

Don't say, "I can't do it." Of course you can.

It wouldn't be a bad idea, after you have worked out patterns for this pedestal according to your own methods, to send copies of your drawings to be published in AMERICAN ARTISAN AND HARDWARE RECORD for comparison with similar drawings and patterns which others may also send in for publication.

Yours truly,
S. M. HOUCK,
Cherokee Metal Works.

Cherokee, Iowa, May 23, 1921.

There is a good deal to be learned before a man can step behind the counter and sell a customer something that does not suit at first sight.

Tools and Supplies That Are Necessary for Automobile Radiator Repair Work.

Written for American Artisan and Hardware Record
by F. L. Curfman, Maryville, Missouri.

In this article, we shall discuss a number of the more important tools, appliances and supplies that should be on hand in every well organized automobile radiator repair department of a sheet metal shop.

The cell scraper, shown herewith, while adapted to other small work, is invaluable for any cleaning job in the core of a honey comb radiator. Since the cell walls are exceedingly thin, extreme care is necessary in preparing the cell for soldering. This scraper being

Honeycomb Cell Scraper.

small enables the mechanic to reach through the cell. With flash light held at back enables one to see when the work has been accomplished. It is made of special air tempered steel, weight 2 ounces, and costs 15 cents.

We have done extensive experimenting on something to clean the cells of the honeycomb type of radiator, but have found it impossible to secure a wire brush which would be effective, on account of the different sizes of cells and the liability of further puncturing the cell on withdrawing the brush.

Here is a bristle brush which we have used to good advantage. While this brush can be used to apply soldering flux it is intended more as a scrub brush; dipped in raw muriatic acid and pulled back and forth in the cell of a honeycomb radiator, it soon prepares the cell for soldering. It can also be used for applying

Round Acid Swab.

acid around the ends of tubes, or should you wish to tin a tube inside this will do the cleaning same as in a cell. Made of extra heavy wire, bristle part 1 inch long and ½ inch in diameter. Total length, 6 inches. Weight, per dozen, ½ pound. Price, per dozen, 45 cents.

While one of these brushes does not last a great while you can save your customer money by using them and charging the price on each job.

A steel wire brush for removing paint, rust, cor-

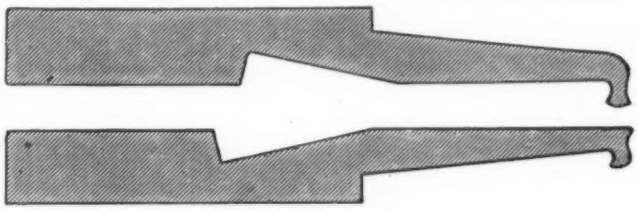
Steel Wire Brush for Removing Rust, Paint, Etc.

rosion and lime deposit from mental preparator to soldering, is shown herewith.

This brush is constructed of steel handle 7 inch long with telescoping wires 5 inches long. At point where brush is formed measures 7-16 inch wide and ⅛ inch thick. These brushes come with the wires completely telescoped. To use the brush push the wires out from the handle with push button "A" about ⅝ of an inch, dent handle with hammer at point "B" to prevent the wires from sliding back in handle while using, when this first ⅝ of an inch of the wires has been used, grind square across the face and push out another ⅝-inch of the wire and dent handle at "B" as before, this feature makes the brush very long-lived.

This brush weighs two ounces and costs 10 cents.

A tube closer can be made from a piece of band iron such as comes on sheet iron bundles, a piece ten inches long split in the middle about half way back, with hook formed on end, to close tubes with seams opened from you by tapping lightly with small hammer at shoulder made by cutting out the piece, close the seams open toward you by tapping end of closing tool. Two shapes of this tool are shown in the accompanying illustration.



Two Shapes of Tool for Tube Closing.

By the use of the iron which is shown herewith, it is not necessary to make unsightly jobs of plugging up cells in the honeycomb radiator. By using the wire cell scraper to clean surface to be soldered it is possible

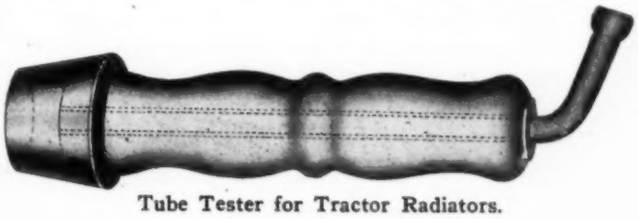
Iron for Soldering in Cell of Honeycomb Radiator.

to solder the full depth of a cell, applying wire solder ahead of iron and using flash light to see what progress you are making. This iron should be at almost red heat, and do not hold in cell too long or it will cool. Per pair (weight ¾ pounds), 75 cents.

This little mirror will save worlds of time and trouble in finding leaks on the back side of tubes and in corners where you do not get a direct view. With it and a hook on point of soldering iron it is possible

Magnifying Mirror.

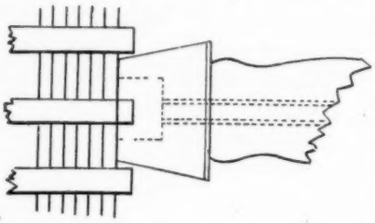
to solder a seam on back side of tubes and avoid tearing out fins on both sides. With this mirror and flash-



Tube Tester for Tractor Radiators.

light you are enabled to see when the broken seam on side or back is properly cleaned and also when the solder is properly applied. The mirror is ¾ inch in diameter, weighs 2 ounces, and costs 75 cents.

A new tool for testing tractor radiators is shown herewith. We, like other radiator repair shops have found difficulty in satisfactorily testing these cast top and bottom tractor radiators.



Showing Method of Testing Tractor Radiator Tubes.

After many experiments we have found the best and easiest way to test is to remove the castings and test each tube separately. As these are giving the most trouble with the tubes vibrating in two where they go through the header plate or the solder loosening at this point. With this tool which has a rubber cup on end place this rubber cup over a tube, as shown in the illustration, holding finger over other end; if the tube leaks at the end where finger is held you know the tube has vibrated in two. The length over all is 6½ inches; it is fitted with two sizes cupped rubbers. Weight ½ pound, and costs $1.50.

NOTE: *This is the sixth of a series of articles dealing with automobile radiator repair work. Other articles of the series will be published in forthcoming issues.*

American Zinc Institute Helps Trade Development Committee.

According to an announcement in the current Bulletin of the American Zinc Institute, 27 Cedar Street, New York City, the Institute is arranging to contribute all available information on zinc working to the Trade Development Committee of the National Association of Sheet Metal Contractors for use in their Sheet Metal Data Book now in preparation.

Zinc, however, can never be adequately presented in this book or in any other way until the Industry completes its Zinc Workers' Hand Book, the demand for which has rapidly grown since the 1920 annual meeting.

Below is a copy of one of many letters received showing the absolute need of the Zinc Workers' Hand Book:

"We have on hand a contract for a large residence which will require considerable sheet metal work. The specifications originally called for another metal, but we have mentioned to the architect the possibilities of using zinc instead, and we would like you to send us all the information you may have on the use of zinc for roofing and gutter work.

"Our experience with zinc has been that it has a tendency to crack after exposure to the weather for a considerable time, but we have noticed through literature you have put out that this fault has been overcome to a large extent. We would also like a sample of No. 13 gauge and No. 11 gauge as these seem to be the thickness required for work of this nature.

"Your early attention will be very much appreciated."

Notes and Queries.

"Burt" Ventilator.

From R. C. Aylward, 916 North Adams Street, Peoria, Illinois.

I would like to know who makes the Burt ventilator.

Ans.—Burt Manufacturing Company, 40 Main Street, Akron, Ohio.

Pipe Joint Cement.

From W. F. Kasbohm, Van Wert Sheet Metal Works, 125 North Washington Street, Van Wert, Ohio.

Please advise who makes a cement that can be used on blow pipes.

Ans.—Otley Paint Manufacturing Company, 1742 North Winchester Avenue, Chicago, Illinois; Wheeler Asahel Company, 58 High Street, Boston, Massachusetts.

Chain Ladders.

From John J. Beard, 559 West Main Street, Lexington, Kentucky.

Kindly inform me where I can obtain a chain ladder fifteen feet long by one foot wide with about one-half inch cylinder steps.

Ans.—John Tupper, Lynn, Massachusetts; American LaFrance Fire Engine Company, 1827 South Michigan Avenue, Chicago, Illinois.

"Baker" Eaves Trough Hanger.

From Robertson Brothers Manufacturing Company, 5401 South Western Avenue, Chicago, Illinois.

We would like to know who makes the original Baker eaves trough hanger.

Ans.—W. C. Hopson Company, 516 Ellsworth Avenue, Grand Rapids, Michigan.

Paper Boxes and Cartons.

From E. J. Huddleston, Fountain City, Indiana.

Can you furnish names of manufacturers of small individual cartons and boxes for small articles?

Ans.—Singer Paper Box Company, 815 West Congress Street, Chicago, Illinois; Campbell Paper Box Company, South Bend, Indiana; Automatic Paper Box Works, 1011 South California Avenue, Chicago, Illinois; American Carton Corporation, 1327 West Washington Boulevard, Chicago, Illinois; Gereke-Allen Carton Company, 1701 Chouteau Street, St. Louis, Missouri.

Furnace Paste.

From M. R. Lehman, Quincy Pattern Company, Quincy, Illinois.

Please tell us where to buy furnace paste which is used to paste asbestos sheets in the inside casings on pipeless furnaces.

Ans.—Friedley-Voshardt Company, 733 South Halsted Street; Carr Supply Company, 412 North Dearborn Street; Excelsior Steel Furnace Company, 118 South Clinton Street; all of Chicago, Illinois.

Metal Boat Patterns.

From G. E. Miller, Moncrief Furnace and Sheet Metal Works, 220 South Fifteenth Street, New Castle, Indiana.

Please advise us where we can obtain metal boat patterns.

Ans.—H. F. Thompson Boat and Pattern Works, Decorah, Iowa; also on page 35 of the September 11, 1920, issue of AMERICAN ARTISAN AND HARDWARE RECORD.

Somehow we hold the belief that a regiment of first-class salesmen would make good at the front. Wonder what makes us believe it?

Illustrations of New Patents

Watch This Page. Keep Yourself Informed Concerning Improved Devices Which May Save Labor in Your Shop or Add Another Source of Income to Your Retail Store.

1,371,711. Soldering Iron. James L. Thompson, Greensburg, Pa., assignor of one-half to Harry A. Murray, Greensburg, Pa. Filed Nov. 21, 1919.

1,371,718. Boiler. Henry W. Zimmermann, Cincinnati, Ohio, assignor to Badger Metal Ware Company, Milwaukee, Wis., a Corporation of Wisconsin. Filed Feb. 3, 1919.

1,371,758. Combination Kitchen Utensil. August Gluck and Emma Gluck, Neillsville, Wis. Filed Feb. 3, 1920.

1,371,794. Sectional Tent Stove. Joseph Earl Leonard, Cedar Rapids, Iowa. Filed Sept. 13, 1918.

1,371,799. Tool Holder. Reinhold Mamers, Brooklyn, N. Y. Filed May 18, 1920.

1,371,910. Stove. Charles Edwin Laumeister, Dawson, Yukon Territory, Canada. Filed June 28, 1919.

1,371,939. Razor Blade Sharpening Device. Joseph Simko, Chicago, Ill. Filed May 12, 1920.

1,371,943. Pipe Wrench. Antonio Sperduti, Lead, S. D. Filed July 12, 1920.

1,371,947. Shears Grinder. Ezra Millard Stratton, Virginia, Minn. Filed Dec. 15, 1919.

1,371,948. Apple Corer. Steve Szütz, Minneapolis, Minn. Filed Nov. 15, 1920.

1,371,982. Match Holder. Aubrey C. Sartin, San Pedro, Calif. Filed Aug. 16, 1918.

1,372,025. Firepot. George W. Howes, Dowagiac, Mich., assignor to Beckwith Company, Dowagiac, Mich. Filed Sept. 5, 1919.

1,372,029. File Handle. Adolph Kaplan and John Serediuk, Winnipeg, Manitoba, Canada. Filed May 20, 1920.

1,372,040. Metal Shear. Emil Rendano, Brooklyn, N. Y., assignor to Forbes Tubular Products Corporation, Brooklyn, N. Y., a Corporation of New York. Filed April 9, 1920.

1,372,108. Paint and Other Brush. Albert Henry Timmis, Harrow, England, assignor to Hamilton & Company (London) Limited, London, England. Filed March 25, 1920.

1,372,134. Fire Stretcher. Howel E. Glover, Lonoke, Ark. Filed Aug. 22, 1919.

1,372,239. Vegetable Grater and Slicer. Johann Kutter, Nurembuerg, Germany. Filed Dec. 20, 1920.

1,372,241. Pipe Wrench. John McGhee, Glasgow, Scotland. Filed Aug. 9, 1919.

1,372,287. Chuck. Bengt M. W. Hanson, Hartford, Conn., assignor to Pratt & Whitney Company, New York, N. Y., a Corporation of New Jersey. Filed July 31, 1918.

1,372,289. Dhill Chuck. Thomas J. Hines, Detroit, Mich. Filed Jan. 17, 1919.

1,372,291. Expanding Screw. Benjamin F. Jacobs, Boston, Mass. Filed May 3, 1920.

1,372,301. Fishing Reel. Walter R. Kopp, New Haven, Conn., assignor to Winchester Repeating Arms Co., New Haven, Conn., a Corporation. Filed July 26, 1920.

1,372,333. Damper Mechanism. Hugo H. A. Becker, Rochester, N. Y., assignor to Sill Stove Works, Rochester, N. Y., a Corporation of New York. Filed Dec. 14, 1916.

1,372,355. Stovepipe Collar. William J. Kolts, Kingston, N. Y. Filed Nov. 7, 1919.

1,372,379. Combined Drill and Underreamer. William T. S. Warner, Yuma, Ariz. Filed June 1, 1920.

1,372,453. Reversible Socket Wrench. William Francis Radford, Boston, Mass. Filed Sept. 3, 1919.

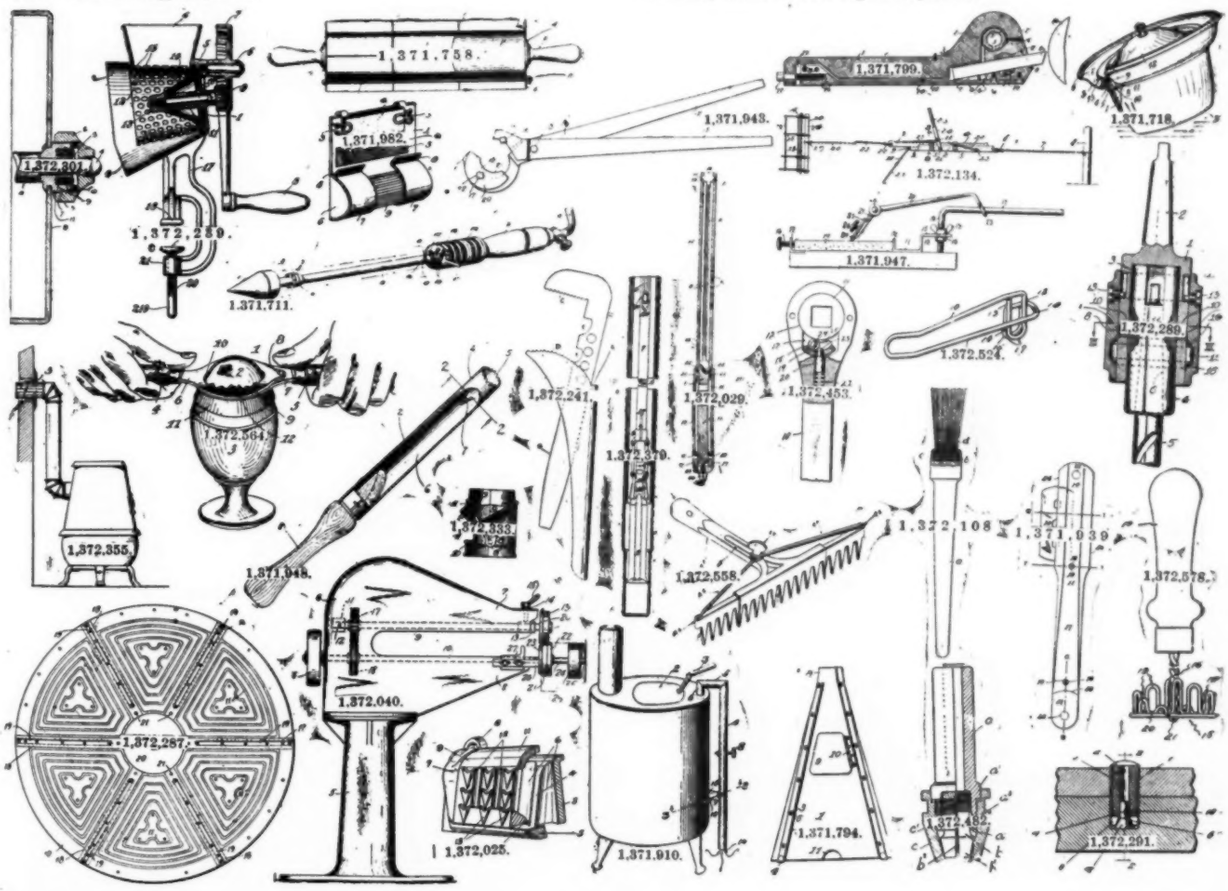
1,372,482. Chuck for Holding Tools and Bars. Charles Henry Clare, Lower Broughton, Salford, EEngland. Filed Nov. 13, 1919.

1,372,524. Clothespin. Paul Samuel Lonviere, Union, La. Filed Nov. 16, 1920.

1,372,558. Adjustable Extension Rake. Henry Saxl, Cave Dale, Calif. Filed June 17, 1919.

1,372,564. Egg Opener. Edwin Simkiss, Montreal, Quebec, Canada, assignor of one-half to Joseph P. William Thuot, Verdun, Quebec, Canada. Filed Aug. 21, 1920.

1,372,578. Egg and Cream Beater. Erwin Weber, Milwaukee, Wis. Filed April 26, 1920.



Weekly Report of the Markets

General Conditions in the Steel Industry. Review of Prices and Tendencies in Sheet Metals, Pig Iron, etc.

STEEL MARKET SHOW LITTLE SIGNS OF BETTERMENT.

The soft, easy undertone which was beginning to appear last week has not abated one jot, in fact the situation has been aggravated if anything by the continued indifference of American consumers.

There has been little material change in the industry save that wage cuts are making their appearance here and there.

The 20 per cent decrease in the United States Steel Corporation mills was started Monday while other mills are commencing to reduce 15 to 25 per cent.

It is not likely that any new reductions in wages will be made at this time as business is so dull and operation so light that wage declines on the basis of present operations would effect very little saving.

At the same time it is not likely that mills will be inclined to drop their prices as the outside demand is so dull that it is doubtful if this expediency would be worth the while.

Most of the business passing is in moderate sized lots for export, such domestic demand as in evidence being confined to jobbing lots with some small demand in sight for rails for the mines.

It is reported that structural and boiler rivets are moving at concessions from the base price while some shading is also reported in plates and in the semi-finished line, billets are easing off.

The demand for sheets is very light and the same condition prevails in plates and the trade would not be greatly surprised to see some shading done in these descriptions before long unless there is an improvement of some sort in business.

Pipe mills are not pessimistic and it is reported in this district that the last few weeks has witnessed a much better demand, especially when compared with the rest of the steel industry.

Much of this demand is coming from the oil districts as the inquiry for tubular goods, casing and line pipe is steady.

The call for standard pipe is also good, jobbers being in the market to replenish stocks which have been pretty well sold out.

Standard steel pipe prices show little signs of weakness and mills are not inclined to accept the smaller orders at the same level of prices as it extended to the quantity consumers.

Steel.

A general review of the situation by one of the leading interests shows that the steel trade is trying, and with some success, to be more cheerful.

"Secretary Mallon, who is as much an iron man as he is a banker, apparently thinks we are on the upgrade," says this authority.

"Charles Schwab is evidently confident of the future, for he is spending $25,000,000 in extensions to the Baltimore plant. Henry Ford is not shutting up shop, for in addition to his great expenditures at the River Rouge furnace plant he is going to spend several millions in a new forging plant.

"Here is the most tangible evidence from three foremost captains of industry that they are preparing to go ahead as usual.

"Another evidence of a turn in the tide is found on the decrease of idle freight cars. The railroad situation is improving. Railroad wages are going to get down to a peace basis, and the altitudinous freight rates, which just now are a regular old man of the sea on the back of business, will commence to descend once more to earth.

"It is now a self-evident truth that the prime necessity for the resumption of business is to make prices that will attract buyers."

Copper.

Much alarm was created on the London Metal Exchange over the alleged attempt to corner the London standard market by American producers and the threatened loss of world prestige to the London Exchange.

It will be recalled that early in May the English "shorts" of spot standard rushed to cover when American buyers withdrew warrants from the market and caused the spot standard price to command a premium of 45s. at one time. The premium quickly slipped back to 20s. and last week the premium on spot was still further reduced. This week the premium on spot over future standard was only 5s.

It would seem perfectly legitimate for the American producers and dealers to make an effort to create New York, rather than London, the center of world copper trading, because the world is largely dependent upon America for its copper supply.

To this end trading in copper is to be resumed with more vigor on New York Metal Exchange under a new and broader contract than has heretofore been in force; but that American producers are directly concerned in the recent speculative movement that caused so much concern in London seems doubtful.

However, to have the copper market of the world made by only some 13,000 tons of standard copper in London would have justified such a movement.

While there is not much trading, the domestic market is strong and prices are ⅛-cent higher in sympathy with the major market.

The demand for electrolytic is mainly for June, but there is more interest in the third quarter position.

Operations, however, are more inclined to await developments in Europe.

Tin.

Following a sharp decline in the London market amounting to £3 for standard spot tin, which brought the quotation down to £181, while a correspondingly

sharp decline took place in futures to £181 10s on top of a decline of £2 in Straits spot tin to £185, a weaker situation developed in the New York spot market, with spot tin ½ cent lower at 32 cents bid and 32½ cents asked.

The asking quotations for 99 per cent tin were ¼ cent a pound lower all round at 31¾ cents a pound.

Settling prices were lowered all round by the New York Metal Exchange, those for standard grades of tin being lowered to 32¼ cents a pound, while for 99 per cent the settling price was shaded to 31.37½ cents.

Chicago prices of tin declined ¼ cent per pound during the week.

Lead.

Buyers of lead are shy at present and disposed to purchase only from hand-to-mouth, and new orders are scarce. But though in lead as in practically everything, the present consumption is below normal, it is claimed by those in a position to judge to be fully up to production.

There is no doubt, however, that the heavy stocks of antimonial lead from war material is a depressing factor, and must be taken into account in any estimate of the position.

Chicago prices have declined 10 points. American pig lead decreased from $5.35 per hundred pounds to $5.25 and bar lead from $6.10 per hundred pounds to $6.00.

Solder.

No further changes have occurred in Chicago solder prices. Quotations now in effect are: Warranted, 50-50, per hundred pounds, $23.00; Commercial, 45-55, per hundred pounds, $21.50; and Plumbers', per hundred pounds, $20.25.

Zinc.

There is still very little demand in the zinc market, but the few inquiries that are reported have resulted in concessions in the attempt to secure orders. The selling desire is mainly for prompt shipment.

The attitude of some producers is still one of indifference to any business below the 5-cent level, claiming that even that figure is below the cost of delivering zinc at East St. Louis, notwithstanding the lower price for ore, quoted this week at $22.50 as against $25 last week.

Those producers, and they are in the majority, are content to hold what stocks they have and continue closed or operating at a very small rate of output till things improve.

There seems to be little progress made as yet in obtaining concessions in the wage scale, and this fact may further curtail the present rate of production according to reports received from smelters who have maintained limited operations in the face of discouragement.

Zinc in slabs declined in Chicago from $5.35 to $5.25 per hundred pounds.

Sheets.

The independents are picking up business here and there, chiefly in small lots. There is no general buying movement, even such as there was about the middle of April, when the mills were withdrawing their old prices in favor of the prices that have become the general market, and were allowing customers to cover on outstanding quotations at the old figures.

However, the independents are, on the whole, picking up more business than a fortnight ago.

As to the leading interest, its incoming business is chiefly in the form of specifications against regular contracts, of which there is still a good supply.

On account of very restricted operation during the major part of last year, owing to car shortage, inadequate shipping facilities and for a while a shortage of coal, the leading interest had a lot of 1920 contract business to carry over into this year, and with a light operation this year the contract business has strung itself out.

Tin Plate.

For production tin plate the market seems to be very stiff at the regular price of $6.25, announced April 15.

Except when tin plate is very scarce and prompt deliveries bring a premium, tin plate out of stock goes at a slight concession, that being considered normal, while just now the concessions are probably a shade more than usual.

If general business revives in the Fall the tin plate industry is likely to pick up, and reverse the usual order of things which is for it to be less active September, October and November than in the immediately preceding months.

In other words, the general line trade has enough room to pick up to make up for the packing season ending, since the demand from the packing trade is so light that its disappearance will not count for a great deal.

While mills are operating more or less intermittently, and changing their rolling schedules almost from week to week, the general average does not seem to show much change from week to week, there being an average of something like 30 per cent of all the tin plate mills in operation.

Old Metals.

Wholesale quotations in the Chicago district which should be considered as nominal are as follows: Old steel axles, $14.50 to $15.00; old iron axles, $24.00 to $25.00; steel springs, $12.50 to $13.00; No. 1 wrought iron, $11.00 to $11.50; No. 1 cast, $14.00 to $14.50; all per net tons. Prices for non-ferrous metals are quoted as follows, per pound: Light copper, 7 cents; light brass, 4 cents; lead, 3 cents; zinc, 2 cents; cast aluminum, 10 cents.

Pig Iron.

The reports continue of curtailed production, and advices stated that the Bethlehem Steel Corporation has only five furnaces out of 26 active, and of these one is running on foundry ore for the open market.

The rest of the active furnaces are making pig iron for conversion into steel that is being used largely in the shipyards of the Bethlehem subsidiaries.

Prices in South and in Buffalo district continue weak, with transactions in the latter at as low as $22 a ton. This is $1 below last week's quotations.

Foundry operations in some instances show improvement. One interest reports 100 per cent increase during past two weeks, due almost entirely to better buying by builders.

Current Hardware and Metal Prices.

AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing Western Hardware and Metal prices corrected weekly.

METALS

PIG IRON.

Northern Fdy. No. 2.....$23 70
Southern Fdy. No. 2..... 28 67
Lake Sup. Charcoal..... 38 50
Malleable 23 70

FIRST QUALITY BRIGHT TIN PLATES.

			Per Box
IC	14x20	112 sheets	$12 50
IX	14x20		13 60
IXX	14x20		15 20
IXXX	14x20		16 60
IXXXX	14x20		18 10
IC	20x28		25 00
IX	20x28		27 20
IXX	20x28		30 40
IXXX	20x28		33 20
IXXXX	20x28		36 20

COKE PLATES

Cokes, 180 lbs.... 20x28 $14 20
Cokes, 200 lbs.... 20x28 14 50
Cokes, 214 lbs....IC 20x28 14 85
Cokes, 270 lbs....IX 20x28 16 65

BLUE ANNEALED SHEETS.

Base.....per 100 lbs. $4 13

ONE PASS COLD ROLLED BLACK.

No. 18-20.....per 100 lbs. $5 20
No. 22-24.....per 100 lbs. 5 35
No. 26.....per 100 lbs. 5 30
No. 27.....per 100 lbs. 5 35
No. 28.....per 100 lbs. 5 40
No. 29.....per 100 lbs. 5 50

GALVANIZED.

No. 16.....per 100 lbs. $5 65
No. 18-20.....per 100 lbs. 5 80
No. 22-24.....per 100 lbs. 5 95
No. 26.....per 100 lbs. 6 10
No. 27.....per 100 lbs. 6 25
No. 28.....per 100 lbs. 6 40
No. 30.....per 100 lbs. 6 90

BAR SOLDER.

Warranted,
50-50.....per 100 lbs. $23 00
Commercial,
45x55.....per 100 lbs. 21 50
Plumbers'.....per 100 lbs. 20 25

ZINC.

In Slabs.....$5 25

SHEET ZINC.

Cask lots.....13c
Less than cask lots.....13¼-13½c

COPPER.

Copper Sheet, mill base...$0 20½

LEAD.

American Pig $5 25
Bar 6 00
Sheet.
Full coils.....per 100 lbs. $8 25
Cut coils.....per 100 lbs. 8 50

TIN.

Pig tin 35½c
Bar tin 37½c

HARDWARE

ADZES.

Carpenters'.
Plumbs.....Per doz. $29 00
Coopers'.
Barton's .....Net
White's .....Net
Railroad.
Plumbs.....Per doz. $30 00

AMMUNITION.

Shells, Loaded, Peters.
Loaded with Black Powder, 18%
Loaded with Smokeless Powder 18%
Winchester.
Smokeless Repeater Grade, ...10 & 4%
Smokeless Leader Grade, ...10 & 4%
Black Powder.....10 & 4%
U. M. C.
Nitro Club.....18%
Arrow 18%
New Club 18%
Gun Wads—per 1000.
Winchester 7-8 gauge 10&7½%
" 9-10 gauge 10&7½%
" 11-28 gauge 10&7½%

Powder.	Each
DuPont's Sporting, kegs..	$11 25
" " ¼ kegs	3 10
DuPont's Canisters, 1-lb..	56
" kegs..	22 00
" ¼ kegs	5 75
" canisters	1 00
Hercules "E.C.," kegs.....	22 50
Hercules "Infallible," 25-can drums	22 00
Hercules "Infallible," 10-can drums	9 00
Hercules "E.C." and "Infallible," canisters.....	1 00
Hercules W. A. 30 Cal. Rifle, canisters	1 25
Hercules Sharpshooter Rifle, canisters	1 25
Hercules Bullseye Revolver, canisters	1 00

ANVILS.

Solid Wrought...23 & 23½c per lb.

ASBESTOS.

Paper up to 1/16.....10c per lb.
Millboard 3/32 to ⅛..10½c per lb.
Corrugated Paper (250 sq. ft.).....$6.50 per 100 lbs.
Rollboard .....11c per lb.

AUGERS.

Boring Machine.....40@40&10%
Carpenter's Nut.....50%
Hollow.
Bonney's.....per doz. $30 00
Post Hole.
Iwan's Post Hole and Well...30%
Vaughan's, 4 to 9 in. .....per doz. $14 00
Ship.
Ford's .....Net

AWLS.

Brad.
No. 3 Handled...per doz. $0 65
No. 1050 Handled " 1 40
Patent asst'd, 1 to 4 " 85
Harness.
Common ..... " 1 05
Patent ..... " 1 00
Peg.
Shouldered ..... " 1 60
Patented ..... " 75
Scratch.
No. IS, socket Handled .....per doz. $ 2 50
No. 344 Goodell-Pratt, list less.....35-40%
No. 7 Stanley...per doz. $ 2 25

AXES.

First Quality, Single Bitted, 3 to 4 lb., per doz. 16 50
First Quality Double Bitted .....per doz. 22 50
Broad.
Plumbs. Can. Pat., 6-lb. 65 00
Single Bitted (without handles).
Plumbs, 4½-lb..... 19 50
Double Bitted (without handles).
Plumbs, 4½-lb..... 23 50

BAGS, PAPER, NAIL.

Pounds ..	10	16	20	25
Per 1000..	$5 00	6 50	7 50	9 00

BALANCES, SPRING.

Sight Spring.....Net
Straight .....Net

BARS, WRECKING.

V. & B. No. 12.....$0 45
V. & B. No. 24..... 0 75
V. & B. No. 324..... 0 80
V. & B. No. 30..... 0 85
V. & B. No. 330..... 0 90

BASKETS.

Clothes.
Small Willow...per doz. $15 00
Medium Willow. " 17 00
Large Willow... " 20 00

Galvanized.	1 bu.	1½ bu.
Per doz.....	$16 08	$18 72

BEATERS.

Carpet.	Per doz.
No. 7 Tinned Spring Wire..	$1 10
No. 8 Spring Wire Coppered	1 50
No. 9 Preston.....	1 75
Egg.	Per doz.
No. 50 Imp. Dover.....	$1 10
No. 102 " " Tinned	1 35
No. 150 " " hotel	2 10
No. 10 Heavy hotel tinned	2 10
No. 13 " " "	3 30
No. 15 " " "	3 60
No. 18 " " "	4 50

Hand.	8	9	10	12
Per doz.	$11 50	13 00	14 75	18 00

Moulders'.
12-inch .....Per doz. 20 00

BELLS.

Call.
3-inch Nickeled Rotary Bell, Bronzed base....per doz. $5 50
Cow.
Kentucky 30%
Door. Per doz.
New Departure Automatic $7 50
Rotary.
3 -in. Old Copper Bell... 6 00
3 -in. Old Copper Bell, fancy 8 00
3 -in. Nickeled Steel Bell 6 00
3½-in. Nickeled Steel Bell 6 50
Hand.
Hand Bell polished List plus 15%
White Metal..... " 15%
Nickel Plated..... " 5%
Swiss ..... " 10%
Miscellaneous.
Church and School, steel alloys 30%

Farm, lbs..	40	50	75	100
Each	$3 00	3 75	5 50	7 25

BEVELS, TEE.

Stanley's Rosewood handle, new list .....Nets
Stanley iron handle.....Nets

BINDING CLOTH.

Zinced 55%
Brass 40%
Brass, plated.....60%

BITS.

Auger.
Jennings Pattern.....Net
Ford Car.....List plus 5%
Ford's Ship..... " " 5%
Irwin 35%
Russell Jennings.....plus 20%
Clark's Expansive.....33⅓%
Steer's " Small list, $22 00..5%
" " Large " $26 00..5%
Irwin Car.....35%
Ford's Ship Auger pattern Car .....List plus 5%
Center 10%
Countersink.

No. 18 Wheeler's..per doz.			$2 25
No. 20 " .. "			3 00
American Snailhead	"		1 75
" Rose ...	"		2 00
" Flat	"		1 40
Mahew's Flat	"		1 60
" Snail ...	"		1 90

Dowel.
Russel Jennings.....plus 20%
Gimlet.
Standard Double Cut Gross $8 40
Nail Metal Single Cut .....Gross $4 00—$5 00
Reamer.
Standard Square.....Doz. $2 50
American Octagon... " 2 50
Screw Driver.
No. 1 Common..... 30
No. 26 Stanley..... 75

BLADES, SAW.

Wood.
Disston 30-in.

Nos.	6	66	26
	$9 45	$10 05	$9 45

BLOCKS.

Wooden 20%
Patent 20%

BOARDS.

Stove.	Per doz.
24x24	$13 65
26x26	16 05
28x28	18 85
30x30	21 30
33x33	25 50
36x36	30 50

Wash.
No. 760, Banner Globe (single) .....per doz. $5 25
No. 652, Banner Globe (single) .....per doz. 6 75
No. 801, Brass King, per doz. 8 25
No. 860, Single—Plain Pump 6 25

BOLTS.

Carriage, Machine, etc.
Carriage, cut thread, ⅜x6 and sizes smaller and shorter .....50 & 5%
Carriage sizes larger and longer than ⅜x6.....50%
Machine, ⅜x4 and sizes smaller and shorter.....60%
Machine, sizes larger and longer than ⅜x4....50 & 10%
Stove 70%
Tire .....50 & 10%
Mortise, Door.
Gem, iron.....5%
Gem, bronze plated.....5%